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**RAND**

*Trends for Rural Health Clinics  
and Federally Qualified Health  
Centers Serving Rural Medicare  
Beneficiaries during the 1990's*

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## **PREFACE**

The Health Care Financing Administration (HCFA) contracted with RAND to perform an analysis of Medicare special payments to rural providers and implications for access and costs of care for rural Medicare beneficiaries, with a focus on underserved areas. The payment provisions examined include (1) bonus payments to physicians in rural HPSAs; (2) reimbursements to Rural Health Clinics and Federally Qualified Health Centers; (3) special payments for sole community hospitals, Medicare-dependent hospitals, rural referral centers, EACH/RPCH hospital networks, and Medical Assistance Facilities; and (4) capitation payments in rural counties.

This report presents the findings of our analysis of trends in the number, location, and utilization of Rural Health Clinics (RHCs) and rural Federally Qualified Health Centers (FQHCs) during the 1990's. Section 1 presents background on the legislative history of RHCs and FQHCs, provisions for Medicare payments for these facilities, and other relevant studies. Section 2 describes our analytic methods. In Section 3, we describe trends in the number and distribution of RHCs and FQHCs from 1992 through 1998, ownership and staffing characteristics, and geographical co-locations of the clinics. In Section 4, trends are described for utilization of RHCs and FQHCs by Medicare beneficiaries residing in non-metropolitan counties, and related Medicare and total costs for these services. Section 5 contains a discussion of findings and implications for further analysis of rural payment issues.

This draft report is one of four reports being prepared from our analyses of Medicare special payment policies for rural providers. The other reports address trends during the 1990s in rural hospitals with special Medicare payment designations, bonus payments for rural physicians, and Medicare adjusted average per capita costs (AAPCCs).

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## **SUMMARY**

The Health Care Financing Administration (HCFA) contracted with RAND to perform an analysis of Medicare spending for special payments to rural providers and their implications for access and costs of care for rural Medicare beneficiaries. Our goal was to provide a comprehensive overview of utilization and spending for these services over the last decade. Information from these trend analyses will guide our examination of future Medicare rural payment policy options. The special payment provisions examined include (1) bonus payments to physicians in rural HPSAs; (2) reimbursements to Rural Health Clinics and Federally Qualified Health Centers; (3) special payments for sole community hospitals, Medicare-dependent hospitals, rural referral centers, EACH/ RPCH hospital networks, and Medical Assistance Facilities; and (4) capitation payments in rural counties, especially in underserved areas.

This report presents the preliminary findings from our analysis of Rural Health Clinics (RHCs) and rural Federally Qualified Health Centers (FQHCs). We describe trends during the 1990's in the number, location, and utilization of these facilities by Medicare beneficiaries.

## **BACKGROUND**

Rural health clinics were created by the Rural Health Clinics Act (P.L. 95-210) of 1977 to extend Medicare and Medicaid coverage and cost-based reimbursement to support health care services for beneficiaries in underserved rural areas, including non-physician practitioner services. Separate designations were created for independent and provider-based RHCs. The Omnibus Budget Reconciliation Act (OBRA) of 1989 created the FQHC program to establish cost-based reimbursement for services provided to Medicaid beneficiaries by an existing network of Federally funded community health centers, migrant health centers, and similar facilities. OBRA 1990 extended FQHC reimbursement to cover services provided to Medicare beneficiaries. Both urban and rural health centers are eligible for designation as FQHCs, and the scope of services the clinics are required to provide is broader than those required for RHCs.

Despite their differing histories, Rural Health Clinics and Federally Qualified Health Centers are treated similarly in many ways by the Medicare program.<sup>1</sup> Methods for establishing the cost-based reimbursements are very similar, although Medicare beneficiaries pay deductible amounts for RHC services but not for FQHC services. Reimbursement formulas differ for provider-based facilities and independent facilities (either RHC or FQHC). Independent facilities are reimbursed an all-inclusive rate for a bundled package of core services and the provider-based facilities are reimbursed reasonable costs for the individual services provided (unbundled). Other services provided by the facilities, such as radiology or therapy services, are paid under the Physician Fee Schedule or other applicable Medicare payment methods.

The Balanced Budget Act of 1997 (BBA) made several changes in Medicare policy for RHCs and FQHCs. BBA provisions included: (1) refinement of the definition of what constitutes a qualifying rural shortage area for RHC eligibility; (2) establishment of criteria for determining which clinics may continue as approved Medicare RHCs in areas that lose designation as shortage areas; (3) limitations on waivers of some non-physician staffing requirements; (4) extension of the all-inclusive rate and related payment limits to provider-based RHCs except in hospitals with fewer than 50 beds; (5) rules to prevent "commingling" of RHC and non-RHC resources; and (6) establishment of a quality assurance program.

## **METHODS AND DATA**

This study examined two aspects of trends for RHCs and FQHCs during the 1990s: trends in (1) the numbers and geographic distribution of facilities and (2) clinic utilization by Medicare beneficiaries and related costs. The facilities included in the analysis were all Rural Health Clinics and Federally Qualified Health Centers located in non-metropolitan counties. The Rural Health Clinics included some clinics located in metropolitan counties, which were included to document their numbers.

The first set of analyses described trends in the numbers of RHCs and FQHCs from 1992 through 1998, working with data in the Provider of Service files. Counts were developed separately for provider-based and independent RHCs. Facilities were profiled based on

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<sup>1</sup> The source of this information is the Medicare Manual for Rural Health Clinics and Federally Qualified Health Centers, Chapter 5 Payment.



ownership status and staffing characteristics. Co-location of facilities was analyzed to assess the extent to which beneficiaries in non-metropolitan counties had access to a clinic or to more than one clinic. Finally, we described the distribution of RHCs and FQHCs across county categories based on the UICs, for frontier counties, by HHS region, and by the two types of underserved areas (MUAs and HPSAs).

The second set of analyses estimated utilization rates and costs for services provided by RHCs and FQHCs for beneficiaries residing in non-metropolitan counties, working with the Medicare claims for RHC and FQHC services for the 5 percent beneficiary sample. These estimates were developed on the basis of beneficiary residence by category of non-metropolitan counties, in frontier counties, and in underserved areas. The 5 percent sample data could not be used to perform facility-level analyses of Medicare use and costs for RHCs and non-metropolitan FQHCs because some facilities serving Medicare beneficiaries would not have served individuals in this sample.

Three data sources were used for this analysis: (1) the Medicare Provider of Service (POS) files, which provided information on RHC and FQHC facility type, staffing, location, and certification; (2) an extract of the Area Resource File (ARF extract), which provided county-level information on provider supply, total population, Medicare beneficiaries, HPSA areas, and other environmental variables; and (3) RHC and FQHC outpatient claims for the five percent sample of Medicare beneficiaries for the years 1991, 1992, and 1994. The facility-level POS files were linked to the ARF extract file by state and county location to obtain the characteristics of the county in which a facility was located (e.g., degree of rurality, population, and physician supply). RHC and FQHC claims for the five percent sample of Medicare beneficiaries were matched to the POS facility file based on provider number.

The RHCs and FQHCs included in the analytic data base for each year in our study period were those that were Medicare-certified during the year or those that terminated certification after January 5. This date was chosen to screen out all facilities with termination dates essentially effective the first of the year while retaining facilities that delivered care to Medicare beneficiaries for at least some portion of the year. With this approach of including facilities that functioned at any time during the year, our counts of clinics or centers will be

slightly higher than counts taken for a given point in time, which exclude all facilities terminated before that date.

## **SUMMARY OF FINDINGS**

Substantial growth occurred between 1992 and 1998 in the number of facilities for each of the three types of facilities examined in this study: non-metropolitan FQHCs, provider-based RHCs, and independent RHCs. There were 248 provider-based RHCs in 1992 and 1,896 in 1998. This growth represented an average annual increase of 100 percent, although the fastest rates of growth occurred early in the decade. The number of independent RHCs increased at somewhat lower rates (58 percent annually). Non-metropolitan FQHCs increased from 364 facilities in 1992 to 795 facilities in 1998 (20 percent annual growth). Somewhat different growth trends by geography were observed for the three types of facilities. In general, the greatest growth in FQHCs tended to occur in counties that are adjacent to metropolitan areas and remote counties with a city of at least 10,000 population. The number of independent RHCs also increased faster in the more urbanized non-metropolitan counties, whereas growth in the provider-based RHCs tended to be in more remote counties with smaller towns.

The most remote counties with no town of at least 2,500 population are of special policy interest with respect to access to care for rural beneficiaries. The numbers of FQHCs and both types of RHCs in these counties increased, but these facilities were a declining share of the total number of facilities in non-metropolitan areas because the number of facilities grew faster in other categories of counties. As of 1991, the most remote counties had the highest utilization rates of FQHCs and RHCs, and with growing numbers of facilities, the percentage of beneficiaries in the counties who used each type of facility also increased. Similar increases were found for remote counties with small towns, which also are quite sparsely populated.

The mix of ownership shifted somewhat over time for each facility type. For non-metropolitan FQHCs, both private and public ownership declined, while the "other" category of ownership increased from 45.6 percent to 54.7 percent of the total. Details regarding specific types of ownership within this category were not available from the POS data. For the provider-based RHCs, for-profit ownership declined from 23.0 percent in 1992 to 18.9 percent in 1998. The opposite trend was found for independent RHCs, with for-profit ownership increasing from 45.4 percent in 1992 to 65.3 percent in 1998.

The expanding supply of FQHCs and RHCs led to growth in the number of facilities serving within individual counties. This trend must be interpreted with caution, however, because geographically large counties could contain multiple provider sites without significant overlap in their service area boundaries. A more detailed analysis at the service area level would be required to assess the extent to which a balance is maintained between a goal of improving access to care and the risk of duplicating services.

With greater numbers of FQHCs and RHCs delivering primary care services to Medicare beneficiaries across rural areas, Medicare spending for these services increased accordingly. Based on data from provider claims for the 5 percent beneficiary sample, an estimated \$54.5 million in Medicare spending for all FQHC and RHC services (for rural and urban beneficiaries) in 1991 more than tripled to \$175.8 million in 1994. An estimated \$28.8 million was spent in 1991 for beneficiaries in non-metropolitan counties (52.9 percent of the total), with an increase to \$115.0 million in 1994 (65.4 percent of the total). As of 1994, the distribution of Medicare spending by type of clinic was 42.7 percent for FQHCs, 16.4 percent for provider-based RHCs, and 40.9 percent for independent RHCs. The average Medicare spending per 100 beneficiaries also tripled (from \$7.68 per 100 beneficiaries in 1991 to \$23.99 in 1994), indicating that all but a small portion of the increase was due to growth in the amount of services per beneficiary rather than the size of the beneficiary population. This analysis is being extended to include estimates for 1996 and 1998, which will be included in the findings for the final report.

## **ISSUES AND IMPLICATIONS**

With such a substantial rate of growth in Medicare spending for this primary care program, at least two obvious questions need to be examined. First, what associated changes, if any, are occurring in utilization and spending for other ambulatory care services, i.e., is there a substitution effect in reductions of other services? Second, what effect is the larger supply of FQHCs and RHCs having on timely access to care for rural beneficiaries?

The health policy community has questioned the extent to which existing physician practices converted to RHCs to improve their revenues from the cost-based reimbursement, even though they could continue to be viable as they are. To the extent this behavior was occurring, conversion to an RHC should not change the volume of services being provided by a practice, unless better payments encourage efforts to attract new patients.

The analysis of location of FQHCs and RHCs in HPSAs and MUAs raises other questions that merit further attention. First, how are Medicare spending and total allowed payments distributed across HPSAs and MUAs? We would expect to see a concentration of spending increases in these areas because that is where the clinics are located. Second, how densely are the facilities populating the HPSAs and MUAs, and what are the implications for excess capacity in some of these areas?

The trend of decreasing Medicare payment per encounter is of note because we would expect these payment amounts to increase with inflation rather than decrease. Changes in service mix could yield lower amounts, where the core services may be accompanied by fewer other services paid by fee schedules. Alternatively, the newer RHCs and FQHCs may be more efficient and able to keep their average cost (and all-inclusive rate) lower than those of already existing facilities.

## **Section 1.**

### **INTRODUCTION**

HCFA has contracted with RAND to analyze Medicare special payments to rural providers and their implications for access and costs of care for rural Medicare beneficiaries. The purpose of the research is to evaluate Medicare special payments to rural providers during the 1990's. The project objective is to (1) estimate the relative contribution of these special payments to the Medicare per capita costs in rural counties, and (2) help identify and assess alternative approaches to assuring access.

The purpose of this preliminary report is to describe trends in the number, location, and utilization of Rural Health Clinics (RHCs) and rural Federally Qualified Health Centers (FQHCs) during the 1990's. These two groups of facilities have distinct histories as their roles serving Medicare beneficiaries have evolved over the past decade. Rural health clinics were created by Federal legislation to extend Medicare and Medicaid coverage to support services for populations in remote rural areas — where geographic isolation and small populations make it difficult for a primary care practices to generate enough revenue to attract or retain practitioners. By contrast, FQHCs were established to provide Medicare and Medicaid payments to an existing network of Federally funded community health centers that serve primarily poor populations in urban and rural areas, migrant health centers, and other similarly qualified clinics that serve various special populations. Furthermore, the 1997 Balanced Budget Act (BBA) made significant changes in provisions for RHCs and FQHCs.

### **POLICY BACKGROUND**

Despite their differing histories, Rural Health Clinics and Federally Qualified Health Centers are treated similarly in the Medicare program in many ways (for example, certification requirements and reimbursement methods). In rural areas, Medicare payment mechanisms for both RHCs and FQHCs provide additional financial support intended to protect the financial stability (and therefore availability) of rural health care providers.

Rural health clinics were created by the Rural Health Clinics Act (P.L. 95-210) of 1977. At the time, there were concerns that the health needs of rural Medicare and Medicaid

beneficiaries were not being met, particularly those living in Health Professional Shortage Areas (HPSAs) or in medically underserved areas meeting other such criteria. One objective was to create a cost-based reimbursement mechanism for rural providers to encourage service provision to these rural beneficiaries (Office of Rural Health Policy, 1995). Also, existing rural clinics staffed by nurse practitioners or physician assistants had not been eligible for Medicare reimbursement without immediate supervision of a physician, thus posing an additional financial barrier to practices in rural locations (GAO 1997). Thus a second objective was to encourage the use of mid-level practitioners by allowing reimbursement for services when a physician was not present (Office of Rural Health Policy, 1995).

The Omnibus Budget Reconciliation Act (OBRA) of 1989 created the FQHC program to establish cost-based reimbursement for services provided to Medicaid beneficiaries by Federally funded community health centers. OBRA 1990 extended FQHC reimbursement to also cover services provided to Medicare beneficiaries. For several decades, the community health centers have served populations with reduced financial or geographical access to care in both urban and rural locations. FQHC status offered these centers additional sources of revenue to help support their financial solvency. In addition, clinics that meet the requirements to be a community health center but do not receive Federal support also are qualified for FQHC designation. Both urban and rural health centers are eligible to apply for designation as FQHCs, and the scope of services the clinics are required to provide is broader than those required for RHCs.

### **Overview of RHC and FQHC Requirements**

We provide in Table 1.1 a summary of the basic provisions for designation as RHCs or FQHCs and for reimbursement under the Medicare program. These include the types of facilities designated, eligibility to qualify, type of ownership and required location to be eligible, scope of outpatient services provided, reimbursement rules, and beneficiary cost sharing. The information is presented in a side-by-side comparison to allow ready understanding of similarities and differences in these programs.

**Table 1.1**  
**Federal Provisions for Rural Health Clinics and Federally Qualified Health Centers**  
**Prior To Implementation of the BBA of 1997**

Rural Health Clinics	Federally Qualified Health Centers
<i>Types of facilities designated:</i>	
<ul style="list-style-type: none"> <li>• Provider-based</li> <li>• Independent</li> </ul>	<ul style="list-style-type: none"> <li>• Provider-based</li> <li>• Freestanding</li> </ul>
<i>Eligibility to qualify:</i>	
<ul style="list-style-type: none"> <li>• Determined by the Secretary of HHS to meet requirements of the Social Security Act;</li> <li>• Filed an agreement with the Secretary to provide Rural Health Clinic services.</li> </ul>	<ul style="list-style-type: none"> <li>• Receives a grant under section 329, 330, or 340 of the Public Health Service (PHS) Act;</li> <li>• Recommended by PHS as meeting requirements of the PHS Act (called "look alike");</li> <li>• Was a comprehensive federally funded health center (FFHC) as of January 1, 1990;</li> <li>• Outpatient facility operated by a tribe or tribal organization under the Indian Self-Determination Act or the Indian Health Care Improvement Act.</li> </ul> <p>Only private nonprofit or public ownership</p>
<i>Types of ownership allowed:</i> All types	
<i>Clinic locations required to qualify:</i>	
<ul style="list-style-type: none"> <li>• Rural area (outside Census Bureau urbanized areas)</li> <li>• Located in a Health Professional Shortage area, Medically Underserved Area, or shortage area designated by the state's governor.</li> <li>• RHC designation can continue if its area later loses a shortage area designation.</li> </ul>	<ul style="list-style-type: none"> <li>• Rural or urban locations;</li> <li>• Located in Medically Underserved Area;</li> <li>• Serve residents of shortage areas if not located in such an area.</li> </ul>
<i>Outpatient services required to be provided:</i>	
<ul style="list-style-type: none"> <li>• Physician services;</li> <li>• Nurse practitioner (NP), physician assistant (PA), or nurse-midwife services;</li> <li>• Clinical psychologist and clinical social worker services;</li> <li>• Services and supplies incident to professional services provided;</li> <li>• Visiting nurse services for homebound patients;</li> <li>• Basic laboratory services essential to the immediate diagnosis and treatment of the patient.</li> </ul>	<ul style="list-style-type: none"> <li>• Physician services;</li> <li>• Nurse practitioner (NP), physician assistant (PA), or nurse-midwife services;</li> <li>• Clinical psychologist and clinical social worker services;</li> <li>• Services and supplies incident to professional services provided;</li> <li>• Visiting nurse services for homebound patients;</li> <li>• Preventive primary services.</li> </ul>
<i>Payment for clinics:</i>	
<ul style="list-style-type: none"> <li>• For provider-based clinics, reimbursement of reasonable costs per 42 CFR 413;</li> <li>• For independent clinics, all-inclusive rate based on total allowable costs divided by estimated total visits;</li> <li>• Cap on all-inclusive rate for independent clinics;</li> <li>• Medicare pays 80% of allowed costs or all-inclusive rate after deductible has been met;</li> <li>• Year-end reconciliation of reimbursable costs.</li> </ul>	<ul style="list-style-type: none"> <li>• For provider-based clinics, reimbursement of reasonable costs per 42 CFR 413;</li> <li>• For freestanding clinics, all-inclusive rate based on total allowable costs divided by estimated total visits;</li> <li>• Cap on all-inclusive rate for freestanding clinics;</li> <li>• Medicare pays 80% of allowed costs or all-inclusive rate;</li> <li>• Year-end reconciliation of reimbursable costs.</li> </ul>
<i>Beneficiary financial liability:</i>	
<ul style="list-style-type: none"> <li>• Annual deductibles of the first \$100 for services plus expenses for the first 3 pints of blood;</li> <li>• 20% of remaining reimbursable costs.</li> </ul>	<ul style="list-style-type: none"> <li>• No annual deductible</li> <li>• 20 percent of reimbursable costs.</li> </ul>

SOURCE: 42 CFR Section 405, Subpart X; Medicare Provider Manual for Rural Health Clinics and Federally Qualified Health Centers.

RHCs and FQHCs provide services for underserved areas. For RHCs, the facility must be located in a non-urbanized area designated as a health professional shortage area (HPSA) or a Medically Underserved Area (MUA), as specified in the Public Health Service (PHS) Act. RHCs have an additional designation option – location in an area designated as underserved by a state's governor and approved by HHS. Practices in non-urban locations with unmet primary health care needs, but without any of these shortage area designations, may be eligible for RHC status, but this provision is rarely invoked by HCFA, according to the Office of Rural Health Policy (1995). An FQHC is required to serve populations in a MUA or MUP but does not have to be physically located in such a designated area (Office of Rural Health Policy 1995). A facility serving a HPSA or other designated area that does not have MUA status does not qualify for FQHC status.

An FQHC can convert to an RHC (or vice versa), but a facility cannot have concurrent status as both an FQHC and RHC within Medicare or Medicaid. However, a facility may be a RHC for Medicare and at the same time a FQHC for Medicaid. It also is possible to have multiple facilities with different designations within a network, or for a facility to have RHC status for Medicare and FQHC status for Medicaid. As noted by the GAO (1997), the financial incentive to become an RHC or FQHC is the cost-based reimbursement, where other providers must operate within the constraints of prospectively defined Medicare fee schedules that may pay them below their costs.

Two of the major changes made by the BBA of 1997 addressed requirements for clinic location and payment rules. Both RHCs and FQHCs may be organized as either provider-based clinics or independent facilities. A provider-based clinic is part of a larger facility such as a hospital, home health agency, or skilled nursing facility. Payment rules historically differed for provider-based and independent facilities, but the BBA eliminated those differences. The BBA also tightened up the allowance for continuation of RHCs after the areas where they are located lost designation as a shortage area. Additional details of the BBA changes are discussed below.

### **Designations for Underserved Areas**

Eligibility for many of the rural programs and payments being addressed by this project requires service providers to operate in underserved areas, which are designated based on



Congressional provisions for Medically Underserved Areas/Populations (MUA/P) and Health Professional Shortage Areas (HPSAs). These areas are designated by the Health Resources and Services Administration (HRSA) through its regulatory process. HRSA first designated MUAs in 1973 and has added new MUA/P designations periodically through the 1990s. HPSAs were first designated in 1978 (HRSA, 1998; Goldsmith and Ricketts, 1999). HRSA reviews HPSA designations every three years, adding or deleting area designations as appropriate. In 1997, roughly 64 percent of counties outside of MSAs contained at least one region officially designated as a HPSA and roughly 10 percent of non-MSA counties had no active primary care physician (NC-RHRPAC, 1998). HRSA also has added new MUA/P designations periodically through the 1990s, but no existing MUA designations have been deleted.

In response to requirements of the Health Centers Consolidation Act of 1996, HRSA is revising the criteria and procedures for designating MUA/Ps and HPSAs. Earlier proposed changes provided for the HPSAs to be a subset of the MUA/Ps and use of a consistent set of criteria to determine the two designations (HRSA, 1998). In response to extensive comments received on these proposed rules, HRSA is making substantial changes to the methodology, with plans to publish a revised proposed rule in 2001.

## **EVOLUTION OF THE RURAL HEALTH CLINIC PROGRAM**

The rules and regulations governing RHCs and FQHCs changed periodically during the 1980's and 1990's. The most rapid growth in numbers of FQHCs occurred in the first few years following the enabling legislation. However, initial response to the RHC enabling legislation was weaker than expected, and program growth was slow. Reported reasons for this slow growth included caps on reimbursement rates that were considered low; restrictive state laws regarding independent practice for midlevel practitioners, a burdensome certification process, and concerns by states regarding cost impacts of RHC status on state-operated Medicaid programs (Office of Rural Health Policy, 1995). Summarized here are key program changes during the 1980's and early 1990's, as compiled by the Office of Rural Health Policy (1995).

### ***Selected Amendments and Regulatory Changes in Legislation:***

#### **OBRA 1987**

- Increased reimbursement cap for RHCs
- Mandated annual increases in the RHC cap based on the Medicare Economic Index
- Added services of clinical psychologists to core services for RHC

#### **OBRA 1989**

- Reduced FTE time of midlevel practitioner in RHC from 60% to 50% of operating hours
- Added certified nurse midwives to definition of midlevel practitioners for RHCs
- Added clinical social work services to core services of RHCs
- Provided governors the option of designating areas with shortage of personal health services, and expanded shortage area eligibility to areas with a designated population group and high migrant areas for RHCs

#### **OBRA 1990**

- Expedited the approval timeframe for RHC certification
- Modified productivity screens

#### **1992—**

- Excluded all diagnostic tests (except selected clinical laboratory services) from the all-inclusive reimbursement rate, thus permitting reimbursement of these services beyond the cost-based payment for RHCs and FQHCs

#### **OBRA 1993**

- Clarified FQHC eligibility of outpatient programs operated by tribes and tribal organizations

In the early 1990's, new RHC certifications began to increase substantially. Some were concerned that the criteria for presence in an underserved area were too inclusive and that RHCs were located in areas that did not have sufficient need. The regulations governing RHCs essentially "grandfathered" RHC eligibility once the criteria had been met, with the objective of ensuring that RHCs would be able to attract health professionals to the rural area by creating greater stability in terms of ongoing eligibility. There were also concerns that cost-reimbursement did not encourage efficiency and was not the most effective use of public funds for the purpose of expanding health care access to rural Medicare beneficiaries.

Various recommendations have been offered by different agencies and institutional reports during the mid-1990's addressing these issues, including the following:

### ***Certification***

- Create specific underserved designation criteria (GAO 1997), re-evaluate designations periodically, and/or establish new criteria other than rural and underserved (HHS Inspector General, 1996);

- Eliminate concentrations of RHCs by requiring documentation of need, creating geographic limits for locations, and involving state officials in certification (HHS Inspector General, 1996).

### ***Reimbursement***

- Require Medicare billing itemized by the service provided, rather than as an encounter, for independent RHCs (as provider-based RHCs reimbursed on charges currently do) (HHS Inspector General, 1996);
- Require that provider-based RHCs also submit the cost report worksheets submitted by independent RHCs (HHS Inspector General, 1996);
- Implement caps on provider-based RHCs along with focused audits (HHS Inspector General, 1996);
- Implement standardization of itemized billing and definitions of an encounter (HHS Inspector General, 1996);
- Determine what proportion of independent RHCs are reimbursed at the capped rate, and consider a flat rate with itemized billing and annual adjustments (HHS Inspector General, 1996).

### **CHANGES MADE BY THE BBA OF 1997**

Interest in these issues culminated in legislative changes made by the 1997 BBA. The provisions of the BBA included the following:

- refinement of the definition of what constitutes a qualifying rural shortage area for RHC eligibility;
- establishment of criteria for determining which clinics may continue as approved Medicare RHCs in areas that lose designation as shortage areas;
- limitations on waivers of some non-physician staffing requirements;
- extension of the all-inclusive rate and related payment limits to provider-based RHCs except in hospitals with fewer than 50 beds;
- rules to prevent "commingling" of RHC and non-RHC resources; and

- establishment of a quality assurance program (Federal Register, 2000).

## **MEDICARE PAYMENT PROVISIONS**

We provide here an overview of the Medicare cost-based reimbursement provisions for RHC and FQHC services that were in effect through 1997.<sup>2</sup> The payment methods are the same for RHCs and FQHCs, except that Medicare beneficiaries pay deductible amounts for RHC services but not for FQHC services. The methods differ for provider-based facilities and independent facilities, where independent facilities are reimbursed an all-inclusive rate for a bundled package of core services and the provider-based facilities are reimbursed reasonable costs for the individual services provided (unbundled). Other services provided by the facilities, such as radiology or therapy services, are paid under the Physician Fee Schedule or Medicare payment provisions for institutional outpatient services.

For each provider-based RHC or FQHC, an interim payment is calculated at the beginning of each year based on the facility's estimate of what its costs will be during the year for the core services provided. This payment is adjusted periodically during the year to reflect actual experience. There is a reconciliation of allowable costs at the end of each year, using standard Medicare methods for cost estimation (per Section 413 of the CFR) and claims for services provided. If the total costs are greater than the sum of the all-inclusive rate payments made during the year, Medicare pays the balance to the facility; if there are overpayments, the facility must return the excess funds to Medicare. Payments for provider-based facilities are not subject to any payment limits.

The all-inclusive rates for independent RHCs and freestanding FQHCs are calculated by HCFA at the beginning of each year, and the rates are updated periodically during the year to achieve total reimbursements close to total allowable costs for the year. A separate rate is calculated for each RHC or FQHC as the total allowable costs for core services to Medicare beneficiaries, divided by the total number of outpatient encounters for these beneficiaries. Like the provider-based facilities, total costs are reconciled at the end of each year, with adjustments paid by either Medicare or the facility as needed.

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<sup>2</sup> The source of this information is the Medicare Manual for Rural Health Clinics and Federally Qualified Health Centers, Chapter 5 Payment. Modifications to these provisions by the BBA went into effect in September 1997.

The all-inclusive rates are subject to payment limits (caps) that were initially established by legislation and are updated each calendar year by the percentage increase in the Medicare Economic Index applicable to primary care physician services. The payment limits for RHCs, urban FQHCs, and rural FQHCs for years 1988 through 1997 are listed in Table 1.2. As shown, the limits are higher for the rural FQHCs than the RHCs, reflecting the broader set of services covered by the FQHCs reimbursements. In addition, the limits for urban FQHCs are higher than those for rural FQHCs. Between 1992 and 1996, the percentage adjustments were higher for the FQHCs than the RHCs because the annual adjustments included both MEI adjustments and adjustments for general increases in family practice payments resulting from transition to the new physician fee schedule.<sup>3</sup> Both RHCs and FQHCs had the same 2.0 percent adjustment in 1997.

**Table 1.2**  
**Payment Limits for the Medicare All-Inclusive Rates**  
**for Independent RHCs and FQHCs, 1988-1997**

Year	Payment Limit per Clinic Encounter			Percentage Annual Adjustment	
	RHCs	Rural FQHCs	Urban FQHCs	RHCs	FQHCs
1988	\$46.00			--	
1990	49.37			4.2%	
1991	50.36	\$62.25	\$72.39	2.0	--
1992	51.77	63.99	74.42	2.8	2.8%
1993	53.17	65.72	76.43	2.7	2.7
1994	54.39	69.65	81.00	2.3	5.98
1995	55.53	72.63	84.47	2.1	4.28
1996	56.64	75.60	87.93	2.0	4.09
1997	57.77	77.11	89.69	2.0	2.0

SOURCE: Medicare Manual for Rural Health Clinics and Federally Qualified Health Centers, Chapter 5 Payment

NOTE: The 1992-1996 annual adjustments for FQHCs include additional adjustments for the general increase in family practice physician payments with transition to the physician fee schedule

<sup>3</sup> The reason for the additional increase in caps for FQHCs was reported in the Medicare Manual for Rural Health Clinics and Federally Qualified Health Centers, Chapter 5 Payment.

## **EARLIER STUDIES OF PROGRAM IMPACT**

In 1997, the GAO conducted detailed site visits in four states with RHCs (Alabama, New Hampshire, Kansas, and Washington) and examined national statistics to evaluate the locations of Rural Health Clinics; the volume of Medicare and Medicaid beneficiaries served; the reimbursement costs; and service patterns between 1992 and 1994. A detailed analysis of several selected locations was performed to characterize RHC location, applying mapping software to determine the extent of RHC co-location and average distance from clinic to beneficiaries. Approximately 5 percent of RHCs were described by the GAO report as existing in areas with fewer than 2,000 residents within 15 miles, while 19 percent of RHCs had more than 50,000 residents within 15 miles of the clinic (GAO 1997). The report noted that nationally, "37 percent of the 2,599 RHCs certified near the end of fiscal year 1995 were located in the same community as other RHCs or FQHCs, with 74 cities having 3 to 6 RHCs" (data source not cited). Based on a review of Medicare and Medicaid claims data for the four study states, approximately 73 percent of the beneficiaries in the GAO sample had earlier obtained care from a provider in their city of residence, or in the city where the RHC was located.

From its evaluation of converted physician practices in the study states, the GAO report concluded that the RHC payments benefit clinics in suburban and rural locations, and that many RHCs were established through conversion of existing physician practices that would have continued to operate in the absence of the special RHC reimbursement provisions (GAO 1997). The GAO also noted the problems with the grandfathering provision allowing RHCs to continue cost-based reimbursement, even after the areas they served no longer were deemed to be medically underserved.

A Mathematica study published in 1997 evaluated the impacts of the recent growth in Rural Health Clinics on access to care and on costs for the Medicare and Medicaid programs (Cheh and Thompson, 1997). The study examined 18 RHCs in 6 states that were designated in 1992-93, including both independent and provider-based clinics. Site visits were conducted to collect detailed information on the clinics, and pre-post comparisons (1991 and 1994) were performed of utilization of outpatient and emergency services, the number of health care professionals per capita, and costs for services. They found evidence of improved access to care, including increases in clinic staffing, increased levels of service per capita, and reduced

utilization of emergency room services. The majority of Medicare cost increases were found to be due to use of cost reimbursement, rather than increased service volume, and costs per encounter were higher for hospital-based clinics than for the independent clinics.

A study of rural hospital proclivity to adopt a provider-based Rural Health Clinic during the 1990's was published in 1999 (Krein, 1999). The purpose of this study was to identify factors associated with decisions by rural hospitals to establish a provider-based Rural Health Clinic. Discrete-time logit models were used to test effects of factors including distance from other hospitals, hospital market share, physician supply, state NPP regulation, hospital financial performance, and measures of innovativeness. Few of the dimensions predicted by traditional economic theory (e.g., competitiveness of market, physician supply) were found to be associated with rural hospitals' decision to establish an RHC. Rather, hospitals appeared to be responding to institutional pressure related to establishment of RHCs by other hospitals, i.e., imitating the strategies of others, perhaps due to uncertainty or limited ability to evaluate strategic options.

More recently, Project Hope is performing a study entitled "Importance of Provider-Based Rural Health Clinics for Parent Hospitals and Local Access to Care" that is assessing the importance to hospitals of establishing an RHC (Walsh Center, 2001). This study is designed to examine the potential impact on rural hospitals and RHCs of the new a cap on Medicare reimbursement to provider-based RHCs imposed by the Balanced Budget Act of 1997 (excluding those for hospitals having fewer than 50 beds). Impacts being examined include parent hospital's financial performance and potential impacts on access to locally-based care if these hospitals or their RHCs are forced to close. According to unpublished information from that study, only 10 percent of hospital-based RHCs have the same address as the hospital, and two-thirds of these RHCs are located in a different town from the hospital.

## **PURPOSE OF THE RHC/FQHC ANALYSIS**

This study examined trends in service use and payments for Rural Health Clinics and Federally Qualified Health Clinics for the time period of 1991 through 1998. The analyses were designed to generate information regarding implications for access to care for beneficiaries in non-metropolitan counties and for cost impacts for Medicare. Our analyses address the following research questions:

***Growth patterns for facilities:***

What were growth trends in the number and characteristics of facility-based RHCs, provider-based RHCs, and non-metropolitan FQHCs, and how did they differ?

In what types of geographic locations was this growth concentrated, as defined by categories of non-metropolitan counties, frontier counties, and HHS regions?

***Service use and costs:***

How did utilization of RHCs and FQHCs by Medicare beneficiaries change over time as the supply of these facilities changed?

What were trends in aggregate Medicare costs, per capita costs, and costs per unit of service for RHC and FQHC services to beneficiaries residing in non-metropolitan counties, and how do these costs vary across categories of counties?

**ORGANIZATION OF THIS REPORT**

The purpose of this document is to describe the characteristics of the facilities over time, their location, and utilization characteristics and descriptives of their population. We begin with description of our methods in Section 2. This is followed by presentation of our major findings in Sections 3 and 4. We conclude the report with a section on issues and implications.



## Section 2.

### METHODS AND DATA

#### ANALYSIS PLAN

Two aspects of trends for RHCs and FQHCs during the 1990s were examined in this study: (1) trends in the numbers and geographic distribution of facilities and (2) trends in clinic utilization by Medicare beneficiaries and related costs. The facilities included in the analysis were all Rural Health Clinics and Federally qualified health center located in non-metropolitan counties. The Rural Health Clinics included some clinics located in metropolitan counties, which were designated based on location in a non-urbanized area. They were included to document their numbers, and information for these facilities is reported separately in some analyses.

The first set of analyses describe trends in the numbers of RHCs and FQHCs from 1992 through 1998, working with data in the Provider of Service files. Counts were developed separately for provider-based and independent RHCs. Facilities were profiled based on ownership status and staffing characteristics. We analyzed co-location of facilities to assess the extent to which beneficiaries in non-metropolitan counties had access to a clinic or to more than one clinic. Finally, we described the distribution of RHCs and FQHCs across county categories based on the UICs, for frontier counties, by HHS region, and by the two types of underserved areas (MUAs and HPSAs).

To analyze clinic co-location, we first created a set of mutually exclusive categories and classified each clinic by whether it was located in a county with no other clinics; with one or more FQHCs; with one or more RHCs (either provider-based or independent); or with a combination of clinic types (at least one FQHC and one RHC, in addition to the index clinic). Then we did a county-level analysis to determine how many counties with at least one clinic had at least one FQHC, one provider-based RHC, one independent RHC, or a combination of RHCs.

We note a limitation in a county-level analysis of co-location in that it does not account for (1) RHCs that are located near each other but are in separate counties or (2) RHCs that are located in the same county but are far apart. Furthermore, with a county-level analysis, it was not feasible to perform a geographically detailed analyses of facility locations within primary

care service areas. We recognize, however, that counties are not a surrogate for service areas. Most counties contain multiple primary care service areas, and many primary care service areas straddle county lines. Therefore, the presence of two or more clinics in a county can not be interpreted as evidence that beneficiaries residing in the county have ready access to more than one of these clinics.

The second set of analyses estimated utilization rates and costs for services provided by RHCs and FQHCs for beneficiaries residing in non-metropolitan counties, working with the Medicare claims for RHC and FQHC services for the 5 percent beneficiary sample. These estimates were developed on the basis of beneficiary residence by category of non-metropolitan counties, in frontier counties, and in underserved areas. This population-based analysis offered useful information regarding use of RHCs and FQHCs by this population of interest. However, the 5 percent sample data could not be used to perform facility-level analyses of Medicare use and costs for RHCs and non-metropolitan FQHCs because some facilities serving Medicare beneficiaries would not have served individuals in this sample. Such an analysis would require use of claims for the 100 percent beneficiary sample, which was beyond the project resources.

## **DATA SOURCES**

Three data sources were used for this analysis: (1) the Medicare Provider of Service (POS) files, which provided information on RHC and FQHC facility type, staffing, location, and certification; (2) an extract of the Area Resource File (ARF extract), which provided county-level information on provider supply, total population, Medicare beneficiaries, and other environmental variables; and (3) RHC and FQHC outpatient claims for the five percent sample of Medicare beneficiaries for the years 1991, 1992, and 1994. The facility-level POS files were linked to the ARF extract file by state and county location to obtain the characteristics of the county in which a facility was located (e.g., degree of rurality, population, and physician supply). RHC and FQHC claims for the five percent sample of Medicare beneficiaries were matched to the POS facility file based on provider number.

The RHCs and FQHCs included in the analytic data base for each year in our study period were those that were Medicare-certified during the year or those that terminated certification after January 5. This date was chosen to screen out all facilities with termination dates essentially effective the first of the year while retaining facilities that delivered care to

Medicare beneficiaries for at least some portion of the year. We will have claims from these facilities for services provided during the period before they discontinued RHC or FQHC operation. With this approach of including facilities that functioned at any time during the year, our counts of clinics or centers will be slightly higher than counts taken for a given point in time, which exclude all facilities terminated before that point in time.

It was necessary to have complete data for SSA state and county codes to achieve a good match between the RHC and FQHC records in the POS and the ARF extract file. Missing values for the matching variables of county code occurred for up to 15 facilities annually. Using city names reported in the POS, we identified cities and counties linkages in a Rand McNally index (2000) for facility locations. The SSA codes for the identified counties were obtained from the 1997 AAPCC file.

The availability of certain county-level data influenced the sets of counties we were able to include in each analysis. The Medicare program recognizes a larger set of counties (or other similar geographic jurisdictions) than those included in the ARF, which is reflected in the set of counties for which AAPCCs have been established historically. The ARF contains only one record for the entire state of Alaska, whereas SSA county codes exist for a number of Alaskan boroughs. We added new records for these boroughs to our analysis file, for which we obtained data on the 1990 population, UICs, Metropolitan Statistical Areas, and Medicare beneficiary counts. A discrepancy also existed for a set of independent cities in Virginia, which the state separates legally from historical county boundaries to form their own jurisdictions. Again, SSA county codes exist for these areas, for which we also added records to our analytic file.

With these new records added to our file, we were able to retain a good level of detail for the Alaska and Virginia areas in most of our analyses. However, we could not obtain data for the new Alaska or Virginia "counties" on physician supply, HPSAs, MUAs, or other county characteristics that were on the ARF. For any analyses that used these variables, we worked with the smaller set of counties for which we had the full set of data. Alaska counties were dropped from the file, and the Virginia independent cities were re-combined with the counties from which they were extracted.

To create the analysis file for the utilization and cost analyses, we subset the institutional outpatient claims files for 1991, 1992, and 1994 to include records only for RHCs and FQHCs,

working with the provider identification numbers that define these providers. We then merged the claims by SSA state and county codes to the geographic master file created for the project that contains all the variables on county urban and rural categories, frontier counties, counts of total population and Medicare beneficiaries and other variables. The merged file positioned us to proceed with a population-based analysis of RHC and FQHC service activity by county of beneficiary residence. In merging these two files, we identified some clinics for which there were claims but that were not in the POS file. We retained these claims in our analysis because we did not want to discard service use data for the population-based analysis.

## **KEY ANALYTIC VARIABLES**

The construction of key variables used in the analyses is described here. The report on the AAPCC analysis (Farley, et al., 2001) describes the construction of key analytic variables such as degree of rurality, geographic location, etc. in detail. That analysis also provides a more detailed rationale for constructing some of the key analytic variables used in this report.

### **Facility type**

The type of clinic (FQHC, provider-based RHC, independent RHC) was determined from the provider identification numbers reported in the POS data. Many FQHCs are funded as community health centers, migrant health centers, etc., which qualified them for designation as FQHCs (Office of Rural Health Policy, 1995). These FQHCs were identified using a variable that codes for type of Federal support under PHS provisions; other facilities were defined as the “look alike” providers that met requirements for Federal support but did not receive funding. Our initial examination of these data indicated that receipt of Federal program support was being underreported in the POS data; we will continue to explore this issue.

The POS records are considered the “gold standard” with respect to total annual facility counts, but the ARF also includes a variable for the number of Rural Health Clinics in a county for the year 1994. We evaluated the level of agreement between clinic counts generated from the POS files and the aggregate variable in the ARF. This comparison showed that counts of clinics were somewhat higher from the 1994 POS files than from the ARF data. The POS file contained

827 provider-based RHCs and 1,318 independent RHCs, for a total of 2,145 clinics. In contrast, the ARF reported a national total of 2,032 RHCs for 1994.<sup>4</sup>

The count of certified facilities also was compared to the counts of total Rural Health Clinics with one or more Medicare beneficiary visits, generated from the claims data. From the claims data, we tabulated the number of clinics that provided services to one or more Medicare beneficiaries in the 5 percent sample through the FQHC/RHC program. The claims for the five percent sample of beneficiaries underestimate the total number of facilities providing services as FQHCs or RHCs because some facilities did not serve any beneficiaries in the five percent sample even though they did serve other beneficiaries. Thus, our analyses of utilization and costs are limited to population-based measures, for which the sample is well suited.

The differences in facility counts obtained from the 1994 POS file and provider claims for the five percent sample are reported in Table 2.1. As expected, the total number of facilities identified as providing services to Medicare beneficiaries in the five percent sample in 1994 was smaller than the total number of certified facilities for that year. In 1994, there were 1,434 certified FQHCs on the POS file, compared to 1,078 FQHCs identified as having one or more paid Medicare claims for the 5 percent beneficiary sample. This includes FQHCs in urban and in non-urban areas. Further analyses of the 100 percent claims files would be required to assess how much of this finding is attributable to certified facilities that did not have any claims in 1994.

**Table 2.1**  
**Counts of FQHCs and Rural Health Clinics by Type and Data Source, 1994**

Data Source (1994)	Number of Clinics		
	FQHCs*	Provider-based RHCs	Independent RHCs
Provider of Service File	1,434	827	1,318
Claims for 5 percent sample	1,078	727	1,098

NOTE: Claims were found in the 5% sample file for additional facilities that were not in the POS file.

\* Includes all FQHCs in metropolitan and non-metropolitan counties.

<sup>4</sup> This discrepancy may be due to overcounts in the POS files because not all facilities that have stopped operation are reported to HCFA, which has been found by some researchers (personal communication). In addition, the criteria we used include all facilities that were certified at some time during each year, which yields larger counts than a count taken at a point in time during the year.

## Location and Geographical Distribution

Geographical designations with the strongest relevance to RHCs and FQHCs are location in or out of a Metropolitan Statistical Area (MSA), location in a Health Professional Shortage Area (HPSA), and location in a Medically Underserved Area (MUA). As noted earlier, eligibility requirements regarding clinic location differ for FQHCs and for RHCs. (Moreover, as discussed above, RHCs are “grandfathered” to retain RHC status if the shortage area designation is withdrawn for the area where they are located.) HRSA designates HPSAs and MUAs using separate sets of criteria. A HPSA designation refers to a geographic area or population having fewer than one primary care physician per 3,500 people.<sup>5</sup> A medically underserved area (MUA) is designated based on primary care ratios as well as community income levels, the infant mortality rate, and other factors. MUA designations were added over time but no areas had their designation removed. For both MUAs and HPSAs, designations may be made for either whole-county or partial-county areas. Designations for HPSAs were available in the ARF for years 1993, 1995, 1996, and 1997. A data file with the MUA designations was obtained from HRSA, and we merged these data into our county-level analytic file. The MUA designations were as of 1998, so we did not have data on historical trends in MUAs.

Variables were constructed to characterize the degree of rurality for a clinic’s county of location, using categories that collapsed nine categories of the Urban Influence Code (UIC) to seven categories (USDA 2000). Based on a method outlined in Farley et al. (2000), counties located in Metropolitan Statistical Areas (MSA) were designated as large or small metropolitan counties (UIC codes = 1, central and fringe counties in metropolitan areas of 1 million population or more, and UIC = 2, counties in metropolitan areas of fewer than 1 million population, respectively). Counties located outside of MSAs (non-metropolitan counties) were categorized into the following categories:

1. counties that are adjacent to an MSA and have a city of at least 10,000 population (UIC 3 and 5);

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<sup>5</sup> Additional criteria are applied including a national area for delivery of services, high need for primary care services, or insufficient capacity of current providers.

2. counties that are adjacent to an MSA and do not have a city of at least 10,000 population (UIC 4 and 6);
3. remote counties that are not adjacent to an MSA and have a city of at least 10,000 population (UIC 7),
4. remote counties that are not adjacent to an MSA and have a town of 2,500 to 9,999 population (UIC 8), and
5. remote counties that are not adjacent to an MSA and do not have a town of at least 2,500 population (UIC 9).

Urban Influence Codes have not been updated since their publication in 1993. Consequently the stratification of counties using these codes may not reflect the actual rural designation that applied to a county in later years of the study period. To estimate the sensitivity of the categories coded to the use of 1993 designations in later years, we compared the numbers of counties (with clinics) identified in 1998 as being inside or outside a MSA to the numbers found using the 1993 urban influence codes (which distinguish MSA from non-MSA). We found that only a small number of counties would be classified differently if 1998 MSA status were used. Using 1992 POS facility counts, we found that 4 FQHCs and 8 RHCs would be re-classified to metropolitan areas.

An important descriptive characteristic of rural facilities is whether they are located in a frontier county. Counties were defined as frontier if they had a population density of 6 persons per square mile or less based on 1990 Census population counts. Counties designated as frontier are largely concentrated in a group of Western states. We included this geographic demarcation in our definition of a frontier county by excluding counties in Minnesota, the South, and the Northeast that have low population densities that otherwise would qualify them as frontier.<sup>6</sup>

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<sup>6</sup> Counties excluded from frontier status designation were Echols, Georgia; Piscataquis, Maine; Keweenaw, Michigan; Cook, Minnesota; Kittson, Minnesota; Koochiching, Minnesota; Lake, Minnesota; Lake of the Woods, Minnesota; Issaquena, Mississippi; and Hamilton, New York

## **Ownership Status**

The POS defines nine (9) ownership categories for RHCs based on survey data obtained for the RHC application (HCFA 1991). These categories include both for-profit and non-profit ownership, which are subset to individual, corporation, and partnership categories, as well as three additional categories for government facilities (state, local, or federal). We collapsed these categories into three categories of for-profit, non-profit, and government (public) operated.

Fewer ownership categories apply for FQHCs because no for-profit facilities may be designated as FQHCs. The full set of FQHC categories include religious affiliated, private, other, proprietary, state/county government, and combined government and voluntary. We collapsed these categories into private (including religious affiliated, private, proprietary), government (state-county and combined government and voluntary), and other.

## **Provider Supply**

The provider supply variable we used was total active physicians providing patient care, which were available from the ARF for the years 1993 and 1997. We established three different measures of physician supply: (1) number of physicians per county, (2) number of physicians per 100,000 population (which normalizes supply to the size of the county population), and (3) number of physicians per square mile (which is a direct measure of the physical accessibility of physician supply).

## **Utilization and Costs**

The variable for utilization rates was the estimated number of beneficiaries who used RHC or FQHC services, expressed as a percentage of the total beneficiaries residing in the counties where the users resided. This denominator is an estimate of the base of individuals who had the option to use the clinics, from whom the actual users emerged. Because the user counts came from the 5 percent sample, we multiplied the user counts by 20 before dividing by total beneficiary counts to obtain the percentages.

The variables used for our cost analysis were the total amount paid by Medicare, amount paid by a primary payer, service deductible paid by the beneficiary, blood deductible paid by the deductible, and the beneficiary coinsurance paid. We calculated the total payment as the sum of



these amounts. The two key variables analyzed were the Medicare payment amount and the total allowed payment.

Two different denominators were used to calculate per capita payments. The first was the counts of beneficiaries residing in counties of residence for clinic users, which is the same as the denominator used for the utilization variable. The second denominator was the total number of beneficiaries residing in each category of counties for which the RHC and FQHC claims were aggregated in the analysis. This denominator allowed us to derive per capita payments that are normalized to the entire Medicare population, which we measured as payments per 100 beneficiaries. With this constant denominator, we could sum the per capita payments for the three types of clinics to obtain total costs per 100 beneficiaries across these facilities.

### **Section 3.**

## **TRENDS IN NUMBERS AND TYPE OF FACILITIES**

This section provides descriptive information on the total volume of Rural Health Clinics and Federally Qualified Health Centers during the 1990's. This information includes the total number of facilities by type and calendar year and the ownership and staffing characteristics of the facilities. Generally, we do not report information separately for RHCs located in metropolitan counties versus non-metropolitan counties.<sup>7</sup> However, we do report trends separately for FQHCs by metropolitan or non-metropolitan county location. Within the non-metropolitan counties, the distributions of RHCs and FQHCs are examined based on categories of counties at differing levels of "rurality" as defined by the Urban Influence Code and status as a frontier county.

### **NUMBERS OF FACILITIES**

Table 3.1 shows the total number of provider-based and independent RHCs and the number of FQHCs located in non-metropolitan counties, by calendar year for the years 1992 through 1998. For RHCs, the percentages by facility type also are presented. The total number of both provider-based and independent RHCs increased over the 7-year study period. The number of independent RHCs more than doubled over the study period, and the increase in provider-based RHCs was much more dramatic. As a result, the provider-based RHCs increased from 23.1 percent of total RHCs in 1992 to 49.6 percent in 1998. The fastest growth in provider-based RHCs occurred through 1997, with some leveling off in growth in 1998.

We obtained counts of the number of certified RHCs in years before 1992 from published HCFA data (Office of Rural Health Policy, 1991). There were 581 certified RHCs as of October 1990, an increase from 483 certified RHCs in July 1989. Thus, the number of RHCs increased by an average of 245 facilities per year between 1990 and 1992, which was slower than the growth occurring in 1993 through 1996.

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<sup>7</sup> Non-metropolitan counties are defined as counties not located in Metropolitan Statistical Areas.

The non-metropolitan FQHCs doubled in number from 1992 to 1998. There were 364 facilities in 1992, increasing to 795 facilities in 1998. (We report counts for all FQHCs, urban FQHCs, and non-urban FQHCs later in this section).

**Table 3.1**  
**Number of Rural Health Clinics by Type, Calendar Year 1992—1998**

Type of Clinic	1992	1993	1994	1995	1996	1997	1998
Total number of RHCs	1,072	1,419	2,145	2,596	3,361	3,688	3,749
<b><i>Provider-based RHCs</i></b>							
Number	248	454	827	1,136	1,590	1,783	1,860
Percentage of total RHCs	23.1%	32.0%	38.6%	43.8%	47.3%	48.3%	49.6%
<b><i>Independent RHCs</i></b>							
Number	824	965	1,318	1,460	1,771	1,905	1,889
Percentage of total RHCs	76.9%	68.0%	61.4%	56.2%	52.7%	51.6%	50.4%
<b><i>Non-metropolitan FQHCs</i></b>	364	529	629	676	729	763	795

SOURCE: Medicare Provider of Service files

NOTE: Non-metropolitan counties are defined as counties not located in Metropolitan Statistical Areas. Includes all certified RHCs irrespective of geographic location. The distribution of RHCs by metropolitan and non-metropolitan location is analyzed later in this section.

Table 3.2 shows the annual percentage changes in the volume of non-metropolitan FQHCs, provider-based RHCs, and independent RHCs, by calendar year, converting the counts of facilities in Table 3.1 to percentage changes from year to year. The largest growth in the number of facilities was for provider-based RHCs, which increased by 83.1 percent between 1992 and 1993 and by 82.2 percent between 1993 and 1994. There also was a substantial 45 percent increase in the number of FQHCs between 1992 and 1993, with similar rates of growth for those located in metropolitan and non-metropolitan counties. Rates of increase in facilities dropped markedly by the end of 1996, although the number of provider-based RHCs continued to grow by 12.1 percent during 1997.

**Table 3.2**  
**Annual Percentage Growth in FQHCs and Rural Health Clinics by Type,**  
**Calendar Years 1992—1998**

Clinic type	Percentage Change in Number of Clinics from Previous Year					
	1993	1994	1995	1996	1997	1998
Metropolitan FQHCs	45.8	18.1	8.8	11.9	6.2	3.5
Non-metropolitan FQHCs	45.3	18.9	7.5	7.8	4.7	4.2
Provider-based RHCs	83.1	82.2	37.4	40.0	12.1	4.3
Independent RHCs	17.1	36.6	10.8	21.3	7.6	-0.8
Total RHCs	32.4	51.2	21.0	29.5	9.7	1.6

SOURCE: Medicare Provider of Service files

## CLINIC CHARACTERISTICS

We evaluated the type of parent provider indicated for the provider-based RHCs. Nearly all of the provider-based clinics that had a parent identified were found to have a hospital as the parent. The percentages of provider-based RHCs that had a short-term hospital as a parent are as follows: 91.2 percent in 1996, 93.0 percent in 1997, and 94.2 percent in 1998. We do not report percentages for earlier years because of high rates of missing data for this variable. A small number of RHCs (under 10 annually) had a SNF identified as the parent provider.

Table 3.3 shows the total number and percentage of non-metropolitan FQHCs and RHCs (including both metropolitan and non-metropolitan RHCs) by ownership status for 1992 through 1998. As discussed above, FQHCs must be private nonprofit organizations or governmental entities. The ownership status of non-metropolitan FQHCs was relatively stable across the study period, with a modest shift from public and private ownership to the "other" category. RHCs may have any type of ownership, including for-profit organizations. Ownership of provider-based RHCs also has been relatively stable over time, although there was a small shift from for-profit to nonprofit ownership. By contrast, the ownership mix for independent RHCs changed substantially from 1992 to 1998, resulting in a smaller percentage of nonprofit facilities and a larger percentage of for-profit facilities by 1998.

**Table 3.3**  
**Ownership Status of Rural Health Clinics by Type, Calendar Years 1992—1998**

Clinic type	Total Number of Clinics and Percent Distribution by Type of Ownership						
	1992	1993	1994	1995	1996	1997	1998
<b>Non-Metropolitan FQHCs</b>	364	529	629	676	729	763	795
Public	8.2%	7.6%	7.0%	6.5%	6.6%	6.7%	6.5%
Private	46.2	41.4	38.6	39.6	38.0	37.6	38.7
Other	45.6	51.0	54.4	53.8	55.4	55.7	54.7
<b>Provider-based RHCs</b>	248	454	827	1,136	1,590	1,783	1,860
Public	26.2%	25.3%	26.7%	25.9%	26.5%	25.9%	25.6%
Non-profit	50.8	52.6	49.3	48.6	50.5	52.7	55.5
For-profit	23.0	22.0	23.9	25.5	23.0	21.4	18.9
<b>Independent RHCs</b>	824	965	1,318	1,460	1,771	1,905	1,889
Public	10.9%	9.8%	8.9%	7.9%	6.7%	6.9%	6.2%
Non-profit	43.7	37.1	33.5	31.2	29.9	29.4	28.5
For-profit	45.4	53.1	57.7	60.9	63.4	63.7	65.3
<b>All RHCs</b>	1,072	1,419	2,145	2,596	3,361	3,688	3,749
Public	14.4%	14.8%	15.8%	15.8%	16.1%	16.1%	15.8%
Non-profit	38.9	42.1	39.6	38.8	39.7	40.6	41.9
For-profit	46.6	43.1	44.7	45.4	44.3	43.2	42.2

SOURCE: Medicare Provider of Service files

\* Collapsed categories for FQHCs are defined as follows: public (POS codes for state/county government, combined government and voluntary); private (POS codes for proprietary, religious affiliated, private); and other (POS code for other). Collapsed categories for RHCs are defined as follows: public (POS codes for state, local, or federal); non-profit (POS codes for non-profit individual, corporation, or partnership); and for-profit (POS codes for-profit individual, corporation, or partnership).

As discussed earlier, one objective of the legislation that created Rural Health Clinics was to permit Medicare reimbursement for non-physician practitioners to support rural clinics that relied on these professionals to serve beneficiaries. Table 3.4 shows the staffing characteristics of Rural Health Clinics during the 1990's, including the average number of physicians, nurse practitioners, and physician assistants by clinic type.<sup>8</sup> In 1992, the independent RHCs had greater average total staff FTEs than the provider-based RHCs, but the average FTEs for physicians, nurse practitioners, and physician assistants were similar for the two types of RHCs.

<sup>8</sup> Staffing data for FQHCs were not reported in the POS files. For any reported staffing values for the RHCs that were 100 or greater, the values were replaced with the 95th percentile value for that staffing variable, for that particular year. This applies to four variables: total physicians, total nurse practitioners, total physician assistants, and total salaried staff.

Total staffing levels for both RHC types increased slightly from 1992 to 1998. The physician staffing remained stable over the decade for provider-based RHCs, but it increased for the independent RHCs from 1.1 FTEs in 1992 to 1.5 FTEs in 1998. Throughout this time, average FTEs for nurse practitioners and physicians did not change. Despite the increase in physician FTEs for the independent RHCs, these three clinical staff remained at about the same percentage of total staff FTEs (58 percent in 1992 and 56 percent in 1998), indicating growth in other, non-clinical staff in these clinics.

**Table 3.4**  
**Staffing Characteristics of Rural Health Clinics, Calendar Years 1992-1998**

RHC Type and Staffing (FTE)	1992	1993	1994	1995	1996	1997	1998
<b><i>Provider-based RHCs</i></b>							
Physicians	0.9	1.0	1.0	1.0	1.0	1.0	1.0
Nurse practitioners	0.4	0.4	0.5	0.5	0.5	0.5	0.5
Physician assistants	0.6	0.5	0.6	0.4	0.4	0.5	0.5
Total staff FTE	4.8	4.6	5.0	5.0	4.9	4.9	5.1
Clinical as percent of all FTEs	46%	48%	47%	47%	48%	48%	49%
<b><i>Independent RHCs</i></b>							
Physicians	1.1	1.1	1.2	1.3	1.4	1.5	1.5
Nurse practitioners	0.5	0.4	0.4	0.4	0.5	0.5	0.5
Physician assistants	0.6	0.6	0.5	0.5	0.5	0.6	0.6
Total staff FTE	5.8	5.2	5.3	5.5	5.9	6.2	6.2
Clinical as percent of all FTEs	58%	58%	57%	57%	56%	55%	56%
<b><i>Total Rural Health Clinics</i></b>							
Physicians	1.0	1.1	1.1	1.2	1.4	1.3	1.3
Nurse practitioners	0.5	0.5	0.4	0.4	0.5	0.5	0.5
Physician assistants	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Total staff FTE	4.8	5.0	5.2	5.3	5.4	5.6	5.6
Clinical as percent of all FTEs	55%	54%	53%	52%	52%	52%	53%

SOURCE: Medicare Provider of Service files

\*NOTE: Staffing is reported in full-time equivalents (FTE); a small number of facilities (e.g., n=4 in 1992) with zero values for all staffing values are excluded.

## PROXIMITY OF RHCs TO OTHER CLINICS

A key item for understanding trends in the distribution of RHCs is the extent to which RHCs are located close to other similar facilities. Several reports and studies have suggested that some RHCs are located in areas with multiple facilities (e.g., GAO 1997) and that consequently RHCs may not be appropriately distributed with respect to access needs of Medicare beneficiaries. With a county-level analysis, we determined the proportion of counties having any

FQHCs or RHCs that had more than one health clinic. The measures that we report include the proportion of counties that have any RHC or FQHC, at least one RHC, at least one FQHC, and at least one RHC and one FQHC. We note the limitation that these measures cannot capture the proximity of facilities within county boundaries. In addition, these measures do not necessarily indicate that beneficiaries residing in a county with multiple clinics are served by more than one of these clinics. Also, many FQHCs have multiple delivery sites, some of which may be in counties other than the location of the main clinic, which cannot be captured from the POS data available to us. As well, some FQHCs serve only special populations, such as migrant workers or homeless persons.

Table 3.5 provides county-level figures on facility co-location in non-metropolitan RHCs and non-metropolitan FQHCs. For each year, the total number of counties refers to the number of counties identified as non-metropolitan that have at least one FQHC or RHC. The number of non-metropolitan counties with at least one clinic doubled from 1992 to 1998, so that 1,522 of the 2,292 non-metropolitan counties have at least one clinic in 1998. Counties with at least one provider-based RHC increased most rapidly, in both absolute numbers and percentages of counties that contained any clinics. The number of counties with at least one of the other types of clinics also increased, but the percentage of counties that included each of these types did not increase.

Another approach to understanding the proximity of these health clinics is determining the proportion of each type of facility that is located within the same county as at least one other RHC or FQHC. As noted earlier, we determined for each Rural Health Clinic, the number of other clinics located in the same county each year. We did this by generating aggregate counts of facility types per county per calendar year and then assigning these aggregate counts to each facility record.

**Table 3.5**  
**Total Non-Metropolitan Counties with RHCs and FQHCs,**  
**Calendar Years 1992, 1994, 1996, 1998**

Non-Metropolitan Counties with Clinics	1992	1994	1996	1998
Number of counties with any clinics	737	1,206	1,483	1,533
With 1 or more FQHCs:				
Number of counties with this type	261	444	491	518
Percentage of counties with any clinics*	35.4%	36.8%	33.1%	33.8%
Maximum number of FQHCs	6	9	9	10
With 1 or more provider-based RHCs:				
Number of counties with this type	177	506	796	894
Percentage of counties with any clinics*	24.0%	42.0%	53.7%	58.3%
Maximum number of this RHC type	4	6	10	12
With 1 or more independent RHCs:				
Number of counties with this type	429	654	815	819
Percentage of counties with any clinics*	58.2%	54.2%	55.0%	53.4%
Maximum number of this RHC type	9	13	11	12

SOURCE: Medicare Provider of Service files

\* Percentages do not add to 100% because more than one category may be relevant.

Table 3.6 shows the distributions of rural FQHCs and RHCs, by the total number of clinics located in the county locations of the clinics. For all types of clinics, the percentage of facilities that were the only facility in a county decreased steadily from 1992 to 1998. For example, 40.4 percent of FQHCs were the only facility in their county of location in 1992, and only 18.1 percent of FQHCs had that status by 1998. As expected given the significant growth in provider-based RHCs, the number (and percentage) of FQHCs and independent RHCs located in counties that also had RHCs grew most significantly over the 1990's. For example, in 1992, 12.9 percent of non-metropolitan FQHCs were located in a county with one or more RHCs. By 1998, this figure had grown to 26.3 percent. In contrast, the number of FQHCs located in a non-metropolitan county with only FQHCs declined slightly from 26.7 percent to 21.4 percent.

It is important to note that the figures in Table 3.6 are based on individual facilities that are identified by unique Medicare provider numbers. Review of the clinic characteristics in the POS data shows that some distinct facilities with similar names are present in the same county. Some of these facilities have a common parent provider, but others do not.



**Table 3.6**  
**Co-Location of RHCs and Non-Metropolitan FQHCs:**  
**Number of Clinics in the Same County as One or More Other Clinics**

Clinic Type	Co-located in County with: **:	Number of Clinics *						
		(Percentage Distribution by Types of Other Clinics in County)						
		1992	1993	1994	1995	1996	1997	1998
<b>FQHC</b>		364	529	629	676	729	763	795
	No other clinics	40.4%	37.2%	28.1%	24.0%	21.4%	19.5%	18.1%
	1+ FQHCs only	26.7	26.5	22.9	22.6	21.4	20.8	21.4
	1+ RHCs only	12.9	16.3	23.5	26.3	26.6	26.6	26.3
	1+ RHCs and FQHCs	20.2	20.0	25.4	27.1	30.6	33.0	34.2
<b>Provider based RHC</b>		248	454	827	1,136	1,590	1,783	1,860
	No other clinics	41.5%	32.3%	26.1%	20.7%	16.4%	15.1%	15.3%
	1+ FQHCs only	2.8	7.3	6.5	5.9	4.0	3.5	4.1
	1+ RHCs only	51.6	50.4	53.3	57.0	59.8	60.1	58.8
	1+ RHCs and FQHCs	4.0	9.5	14.0	16.4	19.8	21.3	21.8
<b>Independent RHC</b>		824	965	1,318	1,460	1,771	1,905	1,889
	No other clinics	33.1%	29.4%	20.6%	18.6%	15.5%	13.2%	12.3%
	1+ FQHCs only	8.7	9.0	7.3	6.8	5.8	5.2	5.0
	1+ RHCs only	43.9	44.5	48.6	49.8	52.9	53.8	53.8
	1+ RHCs and FQHCs	14.2	17.1	23.4	24.9	25.8	27.8	28.8

SOURCE: Medicare Provider of Service files

NOTE: Includes all RHCs (including those in metropolitan counties) and only non-metropolitan FQHCs.

\* Clinics with a shared parent provider are counted as separate clinics (i.e., by unique provider number).

\*\* Refers to number of clinics other than the referent clinic, when counting co-located clinics of same type.

Information reported in the POS file allowed us to examine the extent to which facilities changed status between RHC and FQHC designations. We evaluated this for RHCs using the "former provider number" variable reported in the POS file, as reported in Table 3.7. Of the 248 provider-based RHCs in the 1992 POS, for example, none had a former Medicare provider number for a provider-based RHC, 12 had a former number for an independent RHC, and one had a former Medicare number for a short-term general hospital. Of the 1,860 provider-based RHCs in the 1998 POS, 8 had a former Medicare provider number for a provider-based RHC, 176 had a former number for an independent RHC, 2 had a former number for indicated a SNF, 8 had a former Medicare number for a short-term general hospital, and one had a former number for another type of facility. We note that these are not annual transition counts, but are the cumulative number of facilities with former provider numbers, i.e., former provider status

recorded for facilities in the 1998 POS file could have occurred earlier than 1992 or sometime during the 1990's. We take this issue into consideration in interpreting these results.

Several interesting patterns are observed from the information in Table 3.7. First, the only RHCs that appear to have converted from previous status as FQHCs are independent RHCs, and only small percentages of them did so. Second, the highest rates of conversion were between provider-based and independent RHCs, with more RHCs converting from independent to provider-based than vice versa. Third, few RHCs had a change in provider number each year without changing facility type, which we measure as RHCs that only changed ownership.

**Table 3.7**  
**Former Provider Type Among Rural Health Clinics by Type,**  
**Calendar Years 1992—1998**

Current Rural Health Clinic Type and Year	Number of Rural Health Clinics by Former Provider Type (Percentage of total RHCs by Type)			
	FQHC	Provider-based RHC*	Independent RHC*	Other**
<b>Provider-based RHCs</b>				
1992	0 (0.0%)	0 (0.0%)	12 (4.8%)	1 (0.4%)
1993	0 (0.0%)	0 (0.0%)	26 (5.7%)	0 (0.0%)
1994	0 (0.0%)	1 (0.1%)	67 (8.1%)	5 (0.6%)
1995	0 (0.0%)	0 (0.0%)	73 (6.4%)	5 (0.4%)
1996	0 (0.0%)	1 (0.1%)	111 (7.0%)	9 (0.6%)
1997	0 (0.0%)	7 (0.4%)	151 (8.5%)	9 (0.5%)
1998	0 (0.0%)	8 (0.4%)	176 (9.5%)	11 (0.5%)
<b>Independent RHCs</b>				
1992	31 (3.8%)	13 (1.6%)	5 (0.6%)	6 (0.7%)
1993	16 (1.7%)	22 (2.3%)	2 (0.2%)	0 (0.0%)
1994	7 (0.5%)	56 (4.2%)	4 (0.3%)	0 (0.0%)
1995	3 (0.2%)	27 (1.8%)	3 (0.2%)	0 (0.0%)
1996	10 (0.6%)	57 (3.2%)	4 (0.2%)	0 (0.0%)
1997	10 (0.5%)	85 (4.5%)	4 (0.2%)	0 (0.0%)
1998	3 (0.2%)	83 (4.4%)	4 (0.2%)	1 (0.1%)

SOURCE: Medicare Provider of Service files

\* Clinics with a former provider number of the same type have had a change in ownership. Those that switched from one type to another may also have had a change in ownership or may have retained the same ownership.

\*\* "Other" includes short-term hospital, skilled nursing facility, or other facility

Several reports have discussed the fact that some RHCs converted to FQHC status after the FQHC option became available in 1990. FQHCs that previously had been certified RHCs are identified by an indicator in the POS file. Based on counts of the non-metropolitan FQHCs that

had converted from previous RHC status, provided in Table 3.8, an estimated 20 percent of FQHCs formerly were RHCs. These numbers are not annual transition counts, but are the cumulative number of facilities with former provider numbers

**Table 3.8**  
**Non-Metropolitan FQHCs That Previously Were Medicare-Certified**  
**as Rural Health Clinics, Calendar Years 1992—1998**

Year	Number That Were RHCs	Percentage of Total FQHCs
1992	76	20.9%
1993	117	22.1
1994	134	21.3
1995	145	21.4
1996	152	20.8
1997	164	21.5
1998	160	20.1

SOURCE: Medicare Provider of Service files

NOTE: POS data indicate whether an FQHC was formerly an RHC but do not identify the RHC type.

## **DISTRIBUTION OF FQHCs AND RHCs BY TYPE OF RURAL AREAS**

In this section, we examine the distributions of RHCs and FQHCs relative to the extent of rurality of their county locations, HHS regions, and designation of counties as medically underserved areas, including locations in MUAs and HPSAs. This analysis combines POS data about the RHCs and FQHCs with information extracted from the ARF county-level file to assess the extent to which RHCs and FQHCs are serving medically underserved areas and more remote areas, as intended by the enabling legislation.

Table 3.9 shows where FQHCs and RHCs were located during the 1990's by the set of rural designations we derived using the Urban Influence Code (see methods in Section 2). For RHCs, we provide counts for those located in metropolitan and non-metropolitan counties, along with percentage distributions of non-metropolitan clinics by 5 categories of rurality defined based on the UICs. We also show counts of clinics in frontier counties. For FQHCs, we limited the analysis to those centers that were located in non-metropolitan counties, providing counts and percentage distributions by rurality category.

**Table 3.9**  
**Geographic Location of Rural Health Clinics and Non-Metropolitan FQHCs, by Year**

Clinic Type and Location	Percent of Rural Counties	Number of Clinics, Percentage Distributions						
		1992	1993	1994	1995	1996	1997	1998
<b><i>Provider-based RHCs</i></b>								
Metropolitan (number)		30	47	92	159	249	293	296
Non-Metropolitan (number)		218	407	735	977	1,341	1,490	1,564
Percentage distribution:								
Adjacent, city 10,000+	10.9	7.8%	8.6%	8.2%	9.6%	11.6%	11.9%	11.7%
Adjacent, no city 10,000+	32.6	31.5	37.1	35.1	36.0	34.8	34.0	34.2
Remote, city 10,000+	10.2	5.2	6.6	7.6	9.2	10.1	10.5	10.3
Remote, town 2,5-10,000	24.0	27.5	23.8	25.6	24.8	24.1	24.2	24.6
Remote, no town 2,500+	22.3	27.5	23.8	23.5	20.4	19.5	19.3	19.2
Frontier** (number)		45	66	107	119	147	164	174
<b><i>Independent RHCs</i></b>								
Metropolitan (number)		184	191	250	280	353	387	392
Non-Metropolitan (number)		640	774	1,068	1,180	1,418	1,518	1,497
Percentage distribution:								
Adjacent, city 10,000+	10.9	12.1%	13.2%	12.2%	12.8%	12.2%	12.2%	12.3%
Adjacent, no city 10,000+	32.6	31.9	30.2	31.8	33.3	35.0	36.0	35.1
Remote, city 10,000+	10.2	9.2	11.0	12.1	11.0	10.9	10.6	10.3
Remote, town 2,5-10,000	24.0	27.3	27.0	27.0	26.3	25.4	25.4	27.1
Remote, no town 2,500+	22.3	20.3	18.6	16.8	16.6	16.4	15.7	15.2
Frontier** (number)		120	119	133	133	150	139	133
<b><i>Non-Metropolitan FQHCs</i></b>								
Number of clinics		364	529	629	676	729	763	795
Percentage distribution:								
Adjacent, city 10,000+	10.9	9.6%	12.7%	11.8%	12.3%	12.8%	12.7%	13.1%
Adjacent, no city 10,000+	32.6	43.1	39.3	37.8	36.5	35.4	35.8	35.1
Remote, city 10,000+	10.2	8.8	11.0	12.6	12.9	13.4	13.1	13.2
Remote, town 2,5-10,000	24.0	17.6	19.5	20.7	21.2	21.4	21.5	22.1
Remote, no town 2,500+	22.3	20.9	17.6	17.2	17.2	17.0	16.9	16.5
Frontier** (number)		32	62	72	75	78	81	87

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File  
 \* Percentages within the non-metropolitan classification refer to total clinics in the particular rural classification, as a percentage of total clinics in non-metropolitan areas.

\*\* Frontier counties are those with population densities of 6 persons per square mile or less in 18 Western states, where frontier counties predominate.

As the numbers of RHCs and FQHCs grew during the 1990's, their distributions across types of non-metropolitan counties also shifted moderately. Both provider-based and independent RHCs were more heavily represented in counties that lacked significant urbanized

centers. Greater than 40 percent of each type of RHC was located in remote counties with no town or with towns less than 10,000, and another large percentage was in counties adjacent to metropolitan areas that did not have a city of 10,000 or greater population. However, the distributions for provider-based and independent RHCs changed in different directions over time.

With substantial growth in the number of provider-based RHCs, increasing percentages of these RHCs were located in counties adjacent to metropolitan areas and remote counties with a city, while the two categories of more remote counties had declining shares (although we note that the absolute numbers of facilities did increase for these counties). Shifts in the distributions of independent RHCs were smaller. The counties adjacent to metropolitan areas with no city and remote counties with a city gained in shares of these facilities relative to other non-metropolitan counties. The most remote counties, without a town, had a smaller share that declined from 20.3 percent to 15.2 percent of independent RHCs located in non-metropolitan counties.

Similar distributions and trends are found for the FQHCs in non-metropolitan counties. The shares of FQHCs grew from 1992 to 1998 for counties adjacent to metropolitan areas with a city and in remote counties with a town or city (two categories). Shares of FQHCs declined for counties adjacent to metropolitan areas with no city and for the most remote counties with no town. Again, the numbers of FQHCs in these areas grew, but at a smaller rate than in the areas with increasing shares. The FQHCs in the frontier counties may include many of the tribal clinics and migrant farm worker clinics. We are not able to test this question, however, because of missing data for Federal program funding in the POS.

The rates of growth of RHCs and FQHCs in frontier counties differ strongly relative to the overall growth rates of each type of facility. The rates of increase in both provider-based and independent RHCs in frontier counties, although substantial, were much smaller than their overall rates of growth. The provider-based RHCs had an overall growth rate of 617 percent from 1992 to 1998, whereas the growth rate for frontier counties was only 287 percent. The independent RHCs increased overall by 134 percent during this time, while they increased by only 11 percent in the frontier counties. By contrast, growth rates were higher for FQHCs located in frontier counties (172 percent increase) than the overall growth rate for all non-metropolitan FQHCs (118 percent increase).

Distributions of RHCs and FQHCs by HHS regions, shown in Table 3.10, reveal some clear geographic clustering in the locations of the different types of facilities as well as regional differences in their growth in numbers. In 1992, the non-metropolitan FQHCs were concentrated in the Atlanta, Philadelphia, and Chicago regions. By 1998, the largest numbers of these facilities were in the Atlanta, Philadelphia, and Dallas region, with moderate growth in other regions. For the RHCs in 1992, the largest numbers of provider-based RHCs were in the Dallas and Kansas City regions, and the largest numbers of independent RHCs were in the Atlanta region (185 clinics). The Dallas, Kansas City, Denver, and San Francisco also had close to 100 independent RHCs. By 1998, there were substantial numbers of RHCs of both types in all the regions except the Boston, New York, and Seattle regions. The Dallas region had the largest number of provider-based RHCs and the Atlanta region had the most independent RHCs.

**Table 3.10**  
**Number of Rural Health Clinics and Non-Metropolitan FQHCs by HHS Region,**  
**Years 1992 and 1998**

HHS Region	Type of Clinic					
	Non-metropolitan FQHCs		Provider-based RHCs		Independent RHCs	
	1992	1998	1992	1998	1992	1998
All Regions	364	795	248	1,860	824	1,889
1. Boston	0	38	0	27	26	69
2. New York	0	15	0	0	23	10
3. Philadelphia	69	116	0	79	65	115
4. Atlanta	151	240	37	391	185	524
5. Chicago	50	75	15	213	64	344
6. Dallas	0	127	97	564	105	247
7. Kansas City	16	25	54	332	98	257
8. Denver	33	50	31	115	96	107
9. San Francisco	17	56	12	98	93	136
10. Seattle	28	53	2	41	69	80

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File

Locations of RHCs and non-metropolitan FQHCs by MSA areas, HPSA designations and MUA designations for 1993 and 1997, presented in Table 3.11, reflect requirements that these facilities be located in underserved areas. In 1993, 89.0 percent of non-metropolitan RQHCs were located in primary care HPSAs, and this percent decreased slightly to 86.5 percent in 1997. Larger percentages of FQHCs were located in MUAs in both years (95.8 percent in 1993 and 91.9 percent in 1997). These findings indicate that FQHCs are clustered in counties with both

HPSA and MUA designations. When considering HPSAs and MUAs together, the percentages of FQHCs located in counties without either type of area were 2 percent in 1992 and 3 percent in 1993. The FQHCs outside of MUAs probably are those that have qualified for certification by serving a medically underserved population.

**Table 3.11**  
**Total Non-Metropolitan FQHCs and Rural Health Clinics by Location**  
**in Underserved Areas, Calendar Years 1993 and 1997**

Designations of Counties of Clinic Location	Facility Type					
	Non-Metropolitan FQHCs		Provider-based RHCs		Independent RHCs	
	1993	1997	1993	1997	1993	1997
Total number of clinics	529	763	454	1,783	965	1,905
<i>In MSAs (1998 designations):</i>						
Number of clinics	6	11	47	299	191	397
Percentage of total clinics	1.1%	1.4%	10.4%	16.8%	19.8%	20.8%
<i>In primary care HPSAs:*</i>						
Number of clinics	471	660	318	1,211	742	1,428
Percentage of total clinics	89.0%	86.5%	70.0%	67.9%	76.9%	75.0%
Number in partial county HPSAs	216	246	183	576	300	549
Number in full county HPSAs	255	414	135	635	442	879
<i>In Medically Underserved Areas:</i>						
Number of clinics	507	701	414	1,591	870	1,681
Percentage of total clinics	95.8	91.9	91.2	89.2	90.2	88.2
Number in partial county MUAs	384	512	326	1,115	534	1,031
Number in full county MUAs	123	189	88	476	336	650
<i>In either a HPSA or MUA</i>						
Number of clinics	523	743	448	1,722	933	1,841
Percentage of total clinics	98.7%	97.0%	98.7%	96.6%	96.7%	96.6%

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File

NOTE: Excludes facilities in Alaska.

\* Uses 1993 HPSA designations for the 1993 counts, and 1997 HPSA designations for the 1997 counts.

We find smaller percentages of RHCs located in primary care HPSAs, compared to the FQHCs. In 1992, 70.0 percent of provider-based RHCs and 76.9 percent of independent RHCs were in HPSAs, and the percentages declined slightly in 1997 for both types of RHCs. On the other hand, substantially larger percentages of RHCs were located in MUAs, with percentages similar to those for the FQHCs. In addition, very small percentages of RHCs were located in counties without either a HPSA or MUA, although slightly larger percentages were outside these

designated areas than was the case for non-metropolitan FQHCs. These probably are facilities in governor-designated shortage areas, which we cannot identify explicitly with available data. This information would have to be verified for each area by HRSA or the states in question.

The percentages of facilities located in MSAs, according to the 1998 MSA designations, reflected the differences in the rules applicable to each type of facility. The very small percentages for the non-metropolitan FQHCs reflect the measurement error introduced by discrepancies between the 1993 UIC codes and the 1998 MSA boundaries. By contrast, RHCs may be designated to serve non-urbanized areas within metropolitan counties, which is reflected in the percentages in Table 4.3. An estimated 1/5 of the independent RHCs are in MSAs in both 1993 and 1998, and somewhat smaller percentages of the provider-based RHCs were in MSAs.



## **Section 4.**

### **TRENDS IN CLINIC UTILIZATION AND COSTS**

This section describes utilization and cost trends for RHC and FQHC services during the first half of the 1990's, using provider claims for the five percent sample of rural Medicare beneficiaries for the years 1991, 1992, and 1994. This analysis is a population-based analysis of trends in utilization and costs from the perspective of where the beneficiaries reside, which provides insights into who is using the services of RHCs and FQHCs by degree of "rurality" and how that translates into patterns and trends in payments to the facilities that serve them and in Medicare spending on its share of those payments.

It is useful to consider this work in the context of previous studies that have examined RHC costs. The GAO used 1993 claims data to estimate the mean payment for a medical care visit based on the Medicare fee schedule, using procedure codes "...that HCFA officials said would most closely approximate an RHC visit" for independent RHCs (where RHC services included primary medical care and laboratory tests) (GAO 1997). These estimates were based exclusively on claims and did not account for year-end cost settlements between the RHCs and the fiscal intermediaries. The GAO reported that intermediaries indicated cost-report settlements usually increased the total payments to RHCs. The mean payment for independent RHCs (the claimed cost) computed from a sample of cost reports, from the four-state sample, was compared to the fee schedule. The report concluded that "Medicare paid at least 43 percent more for cost-based reimbursement to RHCs than it paid to other providers who were paid under the fee schedule...."

Our analysis also works with payment amounts that precede the year-end reconciliations. Therefore, as discussed in the GAO report, these amounts should be conservative estimates of Medicare costs for RHC and FQHC services.

To document trends in utilization, the measure we have chosen to use is the percentage of beneficiaries that use each of the types of RHCs and FQHCs, which we compare for beneficiaries residing in categories of metropolitan and non-metropolitan counties. This analysis was performed separately for each type of facility, with the purpose to gain an understanding of

the roles of each facility type in different areas. Thus, beneficiaries who obtained services at more than one type of facility are included in the percentages for each type they used, and the percentages cannot be summed across facility types.

The results of this analysis, presented in Table 4.1, indicate that only a small fraction of Medicare beneficiaries residing in metropolitan counties use RHCs or FQHCs, and beneficiaries in the more remote rural counties are the heavier users of each type of facility. In particular, much larger percentages of beneficiaries in the most remote counties—those with no town of at least 2,500 population—use RHCs, compared with residents of any other location. The percentages of FQHC users in these remote areas also are substantial but somewhat smaller.

The growth in percentages of clinic users has been small over time for both the most remote counties and the metropolitan counties. The locations of greatest growth differ for FQHC and RHC services. The percentages using FQHCs increased most for beneficiaries residing in counties adjacent to metropolitan areas or in remote counties with a town of 2,500-10,000 population had using. For RHCs, growth occurred for those residing in all four of the other categories of non-metropolitan counties.

Total Medicare spending for RHC and FQHC services increased substantially between 1991 and 1994. As shown in Table 4.2, Medicare spent an estimated total of \$54.5 million on these services in 1991, and its spending increased to \$175.8 million in 1994. These amounts include all payments made to RHCs and FQHCs, including the cost reimbursement for core services and payments for other services provided that are covered by Medicare fee schedules. At the same time, the distribution of the spending shifted so that increasing shares of spending were for services to rural beneficiaries. An estimated 47.1 percent of the spending in 1991 was for services to beneficiaries residing in metropolitan counties, which dropped to 34.6 percent in 1994.

**Table 4.1**  
**Utilization of Federally Qualified Health Centers and Rural Health Clinics,**  
**by Beneficiary County of Residence, Calendar Years 1991, 1992, 1994**

Clinic Type and Beneficiary Location	Percentage of Beneficiaries Using an FQHC or RHC*		
	1991	1992	1994
<b><i>FQHCs</i></b>			
Metropolitan residents	0.5	0.5	0.8
Non-metropolitan residents:			
Adjacent, city 10,000+	1.6	1.5	2.2
Adjacent, no city 10,000+	4.6	3.4	4.4
Remote, city 10,000+	2.2	2.3	2.3
Remote, town 2,500-10,000	3.4	3.3	4.9
Remote, no town 2,500+	8.5	7.8	10.6
<b><i>Provider-based RHCs</i></b>			
Metropolitan residents	0.1	0.1	0.2
Non-metropolitan residents:			
Adjacent, city 10,000+	1.2	1.5	2.4
Adjacent, no city 10,000+	4.1	6.1	8.0
Remote, city 10,000+	0.7	1.0	2.2
Remote, town 2,500-10,000	3.6	4.6	6.4
Remote, no town 2,500+	12.7	10.9	15.2
<b><i>Independent RHCs</i></b>			
Metropolitan residents	0.3	0.3	0.4
Non-metropolitan residents:			
Adjacent, city 10,000+	2.1	3.0	4.6
Adjacent, no city 10,000+	4.7	5.7	6.6
Remote, city 10,000+	1.9	2.7	4.2
Remote, town 2,500-10,000	4.3	6.5	9.6
Remote, no town 2,500+	16.4	14.4	15.2

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File; Medicare institutional outpatient claims for 5% beneficiary sample

NOTE: Figures are based on claims for the 5 percent beneficiary sample aggregated by county of residence, multiplied by 20 to represent total volume for each year. Percentages are based on all beneficiaries obtaining services at a given type of facility; those who used more than one type are counted in the percentages for each type used.

Within the non-metropolitan counties, the largest share of Medicare spending for RHC and FQHC services was for beneficiaries residing in counties adjacent to metropolitan areas with no city of at least 10,000, and that share increased slightly from 19.1 percent in 1991 to 21.2 percent in 1994. Spending for beneficiaries in the two most remote county categories was an estimated 21.4 percent (sum of the percentages for the two categories) of the total 1991 Medicare spending, rising to 27.9 percent in 1994. Only 4.8 percent of Medicare spending on RHC and

FQHC services in 1991 went for beneficiaries in remote counties with a city of at least 10,000, but this share increased by 54 percent by 1994, to 7.4 percent of total spending on these services.

**Table 4.2**  
**Estimated Medicare Spending for FQHC and RHC Services by Beneficiary Residence**  
**Location and Type of Clinic, Calendar Years 1991, 1992, 1994**

Type of County of Residence	1991	1992	1994
Estimated total payments (\$1,000)	\$54,524	\$75,537	\$175,796
Percentage by county location:			
Metropolitan residents	47.1%	40.3%	34.6%
Non-metropolitan residents:			
Adjacent, city 10,000+	7.7	7.7	9.0
Adjacent, no city 10,000+	19.1	21.4	21.2
Remote, city 10,000+	4.8	5.9	7.4
Remote, town 2,500-10,000	10.5	12.9	15.7
Remote, no town 2,500+	10.9	11.8	12.2
Percentage by type of clinic:			
FQHC	46.7	40.8	42.7
Provider-based RHC	6.2	8.5	16.4
Independent RHC	47.1	50.7	40.9

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File; Medicare institutional outpatient claims for 5% beneficiary sample

\* Payments are the amounts paid by Medicare based on claims for the 5 percent sample of beneficiaries and multiplied by 20 to estimate total payments. The amounts include the cost-based reimbursements for the core services as well as payments for services covered under other Medicare fee schedules.

\*\* Includes claims with zero and negative paid amounts, which reflect application of deductibles and any payments by primary payers.

Looking at the distribution of Medicare spending by type of facility, spending for provider-based RHC services grew substantially from 6.2 percent of total spending in 1991 to 16.4 percent in 1994. This growth was taken from the shares for FQHCs and independent RHCs, both of which declined during this three-year period.

Although provider costs increased over time, as did the payment limits for independent RHCs and freestanding FQHCs, the average Medicare spending per encounter remained virtually the same from 1992 to 1994, as reported in Table 4.3. According to our estimates from claims for the 5 percent sample, Medicare paid an overall average of \$40 per encounter in 1991, 1992, and 1994 for all types of RHCs and FQHCs. The average payment for beneficiaries residing in metropolitan areas was \$45 per encounter in 1991 and increased to \$47 in 1994. These amounts

compared to lower average payments of \$35 to \$42 per encounter for residents in non-metropolitan areas in 1991, which remained steady at averages of \$36 to \$39 in 1994.

**Table 4.3**  
**Average Medicare Spending per Encounter for FQHC and RHC Services by Beneficiary Residence Location and Type of Clinic, 1991, 1992, 1994**

Type of County of Residence	1991	1992	1994
All Claims	\$40	\$39	\$40
By county location:			
Metropolitan residents	45	44	47
Non-metropolitan residents:			
Adjacent, city 10,000+	39	38	38
Adjacent, no city 10,000+	35	35	36
Remote, city 10,000+	42	41	39
Remote, town 2,500-10,000	38	36	37
Remote, no town 2,500+	36	36	39
By type of clinic			
FQHC	47	46	50
Provider-based RHC	35	29	31
Independent RHC	37	37	37

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File; Medicare institutional outpatient claims for 5% beneficiary sample

\* Payments are the amounts paid by Medicare based on claims for the 5 percent sample of beneficiaries and multiplied by 20 to estimate total payments.

\*\* Includes claims with zero and negative paid amounts, which reflect application of deductibles and any payments by primary payers.

Some clear differences are found for trends in average Medicare payments for the services of FQHCs and the two types of RHCs. Medicare payments for FQHC services were an average \$47 per encounter in 1991 and increased to \$50 in 1994. During this same period, average payments declined for provider-based RHC services and remained the same for independent RHC services. Given the large growth in the number of provider-based RHCs and the volume of services they provided, it appears that increases in Medicare spending per FQHC encounter were offset by the simultaneous reduction in per encounter spending for the provider-based RHCs. These results indicate that the newly certified clinics may have lower average costs per encounter, on average, than those of their predecessors. Another contributing factor may be changes in the services included in the core services.

In the next four tables, we present estimated average payment amounts per beneficiary that are normalized to two different measures of beneficiary populations. The payment amounts

reported are the amounts paid by Medicare for the covered services and the total allowed payment amounts, which include the Medicare payment share as well as any payments by other primary payers and beneficiary liability for deductibles and coinsurance. Tables 4.4 and 4.5 report these two payment amounts measured as per capita amounts where the denominator is the number of beneficiaries residing in counties from which each type of FQHC or RHC received patients (measured by having a claim for a beneficiary residing in a county). Tables 4.6 and 4.7 report the payments on the basis of counts of beneficiaries residing in all the counties included in each metropolitan or non-metropolitan category, whether or not a payment claim was made for beneficiaries in the county. The second payment measure is calculated as payment amount per 100 beneficiaries, which brings the normalized amount to a scale that can be observed easily.

The patterns of Medicare payments per beneficiary in served counties, shown in Table 4.4, are quite similar to the utilization patterns reported in Table 4.1. Per capita payments for all three types of providers are highest in the most remote non-metropolitan counties and, relative to other geographic categories, payments also are higher in counties adjacent to metropolitan areas with no city. Per capita payments for residents in all locations increased from 1991 to 1994. Geographic patterns are similar for the total allowed amounts per beneficiary in served counties, reported in Table 4.5.

When the two types of payment amounts are normalized to the total number of beneficiaries residing in the counties in each geographic category, the resulting per capita payments are based on constant population sizes within each category. Thus, it is possible to obtain a sum of the per capita payments for services provided by the three types of facilities to assess the aggregate financial impacts for geographic areas of differing degrees of "rurality".

**Table 4.4**  
**Medicare Payments per Capita for Beneficiaries in Counties Served by a Clinic, by**  
**Beneficiary Residence Location and Type of Clinic, 1991 and 1994**

Type of County of Residence	Average Medicare Payments per Beneficiary		
	FQHC	Provider-Based RHC	Independent RHC
Calendar year 1991			
Metropolitan residents	\$1.17	\$0.03	\$0.42
Non-metropolitan residents:			
Adjacent, city 10,000+	2.88	1.72	3.58
Adjacent, no city 10,000+	8.34	4.92	7.10
Remote, city 10,000+	4.67	0.71	3.00
Remote, town 2,500-10,000	5.43	4.15	6.84
Remote, no town 2,500+	15.75	18.56	25.61
Calendar year 1994			
Metropolitan residents	\$1.86	\$0.21	\$0.59
Non-metropolitan residents:			
Adjacent, city 10,000+	4.73	2.55	6.86
Adjacent, no city 10,000+	8.99	9.86	10.61
Remote, city 10,000+	4.58	2.92	6.80
Remote, town 2,500-10,000	9.84	6.68	15.24
Remote, no town 2,500+	21.53	24.68	24.64

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File;  
Medicare institutional outpatient claims for 5% beneficiary sample

NOTE: Payments are the amounts that Medicare paid the providers as reported on the claims.  
The beneficiaries included in the denominator for each per capita payment were those  
residing in counties in which each type of clinic had provided at least one service to a  
beneficiary in the county.

**Table 4.5**  
**Total Allowed Amounts per Capita for Beneficiaries in Counties Served by a Clinic,**  
**by Beneficiary Residence Location and Type of Clinic, 1991 and 1994**

Type of County of Residence	Average Total Allowed Amount per Beneficiary		
	FQHC	Provider-Based RHC	Independent RHC
Calendar year 1991			
Metropolitan residents	1.65	0.04	0.61
Non-metropolitan residents:			
Adjacent, city 10,000+	4.24	2.45	5.05
Adjacent, no city 10,000+	12.03	7.42	10.13
Remote, city 10,000+	6.62	1.00	4.13
Remote, town 2,500-10,000	7.86	6.00	9.74
Remote, no town 2,500+	22.56	26.11	36.41
Calendar year 1994			
Metropolitan residents	\$2.29	\$0.33	\$0.85
Non-metropolitan residents:			
Adjacent, city 10,000+	5.66	3.77	9.79
Adjacent, no city 10,000+	10.88	14.60	14.96
Remote, city 10,000+	5.60	4.15	9.55
Remote, town 2,500-10,000	11.84	9.80	21.25
Remote, no town 2,500+	25.79	34.86	33.76

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File; Medicare institutional outpatient claims for 5% beneficiary sample

NOTE: Allowed payments are the total amounts the provider received, as approved by Medicare, which include the amounts paid by Medicare, other primary payers, and beneficiary deductibles and coinsurance. The beneficiaries included in the denominator for each per capita payment were those residing in counties in which each type of clinic had provided at least one service to a beneficiary in the county.

We first note the small magnitude of payments when measured on the basis of the entire Medicare population in a given category of counties, which is reflected in the need to report the amounts per 100 beneficiaries rather than per beneficiary. However, despite the differences in denominators, we find the same general patterns of spending by category of counties in 1991, as shown in Table 4.6. The highest rates are in the most remote counties, followed by the counties adjacent to metropolitan counties with no city of 10,000.



**Table 4.6**  
**Medicare Payments per 100 Beneficiaries for All Beneficiaries in Each County,**  
**by Beneficiary Residence Location and Type of Clinic, 1991 and 1994**

	FQHC	Provider-Based RHC	Independent RHC	Total Amount
<i>Calendar year 1991</i>				
All beneficiaries	\$3.59	\$0.48	\$3.62	\$7.68
Metropolitan residents	3.40	0.03	1.35	4.78
Non-metropolitan residents:				
Adjacent, city 10,000+	2.29	0.37	7.09	9.75
Adjacent, no city 10,000+	5.34	1.99	13.03	20.36
Remote, city 10,000+	3.52	0.29	4.73	8.54
Remote, town 2,500-10,000	3.50	1.86	11.16	16.52
Remote, no town 2,500+	8.99	10.36	26.20	45.54
<i>Calendar year 1994</i>				
All beneficiaries	\$10.25	\$3.93	\$9.81	\$23.99
Metropolitan residents	7.95	0.56	2.43	10.94
Non-metropolitan residents:				
Adjacent, city 10,000+	11.79	3.78	20.04	35.61
Adjacent, no city 10,000+	20.01	17.79	32.01	69.81
Remote, city 10,000+	11.69	6.63	23.08	41.41
Remote, town 2,500-10,000	18.33	15.45	45.21	78.99
Remote, no town 2,500+	37.72	53.12	70.57	161.41

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File;  
Medicare institutional outpatient claims for 5% beneficiary sample

NOTE: Payments are the amounts that Medicare paid the providers, as reported on the claims.  
The beneficiaries included in the denominators to calculate payments per 100  
beneficiaries consist of all beneficiaries residing in all counties included each  
geographic category.

A substantial change in Medicare spending per 100 beneficiaries is found to have occurred between 1991 and 1994. Large increases in spending rates occurred for beneficiaries in several of the non-metropolitan categories, which are especially visible in the total amounts that are the sums of the spending rates for the three types of providers. These increases are larger than those obtained for rates based on beneficiaries in served counties because the base population is more stable. The number of beneficiaries in "served counties" in a category increased over time due to both growth in the counties served by RHCs and FQHCs and underlying growth in the Medicare population. The beneficiaries in "all counties" in a category increased only due to Medicare population growth. The greatest growth in total payments per 100 beneficiaries (summed for the three provider types) was experienced in the most remote counties. The other categories of remote counties also had substantial increases in Medicare

payments. As shown in Table 4.7, similar patterns are found for total allowed payments per 100 beneficiaries, for both geographic differences in a year and rates of increase from 1991 to 1994.

**Table 4.7**  
**Total Allowed Payments per 100 Beneficiaries for All Beneficiaries in Each County,**  
**by Beneficiary Residence Location and Type of Clinic, 1991 and 1994**

	FQHC	Provider-Based RHC	Independent RHC	Total Amount
<b><i>Calendar year 1991</i></b>				
All beneficiaries	5.90	1.34	7.50	14.73
Metropolitan residents	5.32	0.14	2.33	7.80
Non-metropolitan residents:				
Adjacent, city 10,000+	3.82	1.12	13.78	18.73
Adjacent, no city 10,000+	9.93	7.14	27.44	44.51
Remote, city 10,000+	6.46	1.29	12.20	19.96
Remote, town 2,500-10,000	7.13	5.39	26.40	38.93
Remote, no town 2,500+	16.15	18.08	61.26	95.49
<b><i>Calendar year 1994</i></b>				
All beneficiaries	12.52	5.74	13.79	32.06
Metropolitan residents	9.79	0.85	3.47	14.11
Non-metropolitan residents:				
Adjacent, city 10,000+	14.11	5.59	28.60	48.31
Adjacent, no city 10,000+	24.22	26.33	45.13	95.68
Remote, city 10,000+	14.29	9.42	32.43	56.15
Remote, town 2,500-10,000	22.06	22.67	63.06	107.80
Remote, no town 2,500+	45.18	75.02	96.69	216.89

SOURCE: Medicare Provider of Service files; analysis file based on 1998 Area Resource File; Medicare institutional outpatient claims for 5% beneficiary sample

NOTE: Allowed payments are the total amounts the provider received, as approved by Medicare, which include the amounts paid by Medicare, other primary payers, and beneficiary deductibles and coinsurance. The beneficiaries included in the denominators used to calculate payments per 100 beneficiaries are all beneficiaries residing in all counties included each geographic category.

## **Section 5.**

### **ISSUES AND IMPLICATIONS**

Although RHCs and FQHCs differ in the scope of services they provide and, in many cases, the populations they serve, they both have grown to become important health care resources for rural populations across the country. This growth is seen not only in the basic numbers of facilities, which have increased substantially during the 1990's, but also in shifts in the locations of the facilities across HHS regions and across counties with differing degrees of "rurality". The combination of provider-level data in the Provider of Service files and claims for RHCs and FQHC services to Medicare beneficiaries has offered rich information to better understand the history, distribution, and activities of these providers in rural areas.

#### **Discussion of Findings**

The growth in the number of RHCs was fairly slow during the 1980's after they were authorized by Congress. The major expansion of RHCs began in the early 1990's, reportedly in response to legislative changes that improved payments and other operating requirements. The number of FQHCs, on the other hand, began to grow almost immediately after the passage of OBRA89 and OBRA90, which created the FQHC program. As a result, although the starting points differed by a decade, the rapid growth in the two programs coincided in the first half of the 1990's.

The trend analyses we present in this report certainly reflect those growth patterns. We observe somewhat different growth trends for each of the three types of facilities examined in this study: non-metropolitan FQHCs, provider-based RHCs, and independent RHCs. In general, the greatest growth in FQHCs tended to occur in counties that are adjacent to metropolitan areas and remote counties with a city of at least 10,000 population. This trend may reflect the role of FQHCs of serving vulnerable populations that tend to reside in more urbanized areas. The independent RHCs also increased faster in the more urbanized non-metropolitan counties, whereas growth in the provider-based RHCs tended to be in more remote counties with smaller towns.

The most remote counties are of special policy interest with respect to access to care for rural beneficiaries. We defined these counties as remote counties with no town of 2,500 population or greater. Although these counties had a declining share of the total number of providers for FQHCs and both types of RHCs, the number of facilities in the counties did indeed increase. As of 1991, the most remote counties already were the heaviest users of FQHCs and RHCs, and with growing numbers of facilities, the percentage of beneficiaries in the counties who used each type of facility also increased. Similar increases were found for remote counties with small towns, which also are quite sparsely populated.

The expanding supply of FQHCs and RHCs led to growth in the number of facilities serving within individual counties. This trend must be interpreted with caution, however, because geographically large counties could contain multiple provider sites without significant overlap in their service area boundaries. A more detailed analysis at the service area level would be required to assess the extent to which a balance is maintained between a goal of improving access to care and the risk of duplicating services.

With greater numbers of FQHCs and RHCs delivering primary care services to Medicare beneficiaries across rural areas, Medicare costs have escalated accordingly. Based on data from provider claims for the 5 percent beneficiary sample, an estimated \$54.5 million in Medicare spending for all FQHC and RHC services (for rural and urban beneficiaries) in 1991 more than tripled to \$175.8 million in 1994. The average Medicare spending per 100 beneficiaries also tripled (from \$7.68 per 100 beneficiaries in 1991 to \$23.99 in 1994), indicating that all but a small portion of the increase was due to growth in the amount of services per beneficiary rather than the size of the beneficiary population.

### **Issues and Implications**

With such a substantial rate of growth in Medicare spending for this primary care program, at least two obvious questions need to be examined. First, what associated changes, if any, are occurring in utilization and spending for other ambulatory care services, i.e., is there a substitution effect in reductions of other services? Second, what effect is the larger supply of FQHCs and RHCs having on timely access to care for rural beneficiaries? It is necessary to obtain answers to the first question to help inform analyses addressing the second question.

A related issue has been raised in the health policy community regarding the extent to which existing physician practices are converting to RHCs to improve their revenues from the cost-based reimbursement, even though they could continue to be viable as they are. To the extent this behavior is occurring, conversion to an RHC should not change the volume of services being provided by a practice, unless better payments encourage the practice to work to attract new patients. Such initiative is in fact the behavior being encouraged through the cost reimbursement. This issue could be informed by profiling trends in the number of beneficiaries served by each provider, number of encounters billed, and associated Medicare spending.

The analysis performed of the locations of FQHCs and RHCs in HPSAs and MUAs has confirmed that the facility locations are consistent with the rules governing the programs. Several questions merit further attention. First, how are Medicare spending and total allowed payments distributed across HPSAs and MUAs? We would expect to see a concentration of spending increases in these areas because that is where the clinics are located. Second, how densely are the facilities populating the HPSAs and MUAs, and what are the implications for excess capacity in some of these areas?

The trend of decreasing Medicare payment per encounter merits further attention because we would expect these payment amounts to increase with inflation rather than decrease. Changes in service mix could yield lower amounts, where the core services may be accompanied by fewer other services paid by fee schedules. Alternatively, the newer RHCs and FQHCs may be more efficient and able to keep their average cost (and all-inclusive rate) lower than those of already existing facilities.

## REFERENCES

- Buto KA. Statement on "Rural Health Clinics" before the House Committee on Government Reform and Oversight Subcommittee on Human Resources and Intergovernmental Relations. February 13, 1997.
- Center for Medicaid and State Operations, Health Care Financing Administration. Letter to State Medicaid Directors. December 1, 1998.
- Cheh V and Thompson R. *Rural health clinics: Improved access at a cost. Final Report submitted to Office of Research and Demonstrations*, Health Care Financing Administration No. 500-92-0047 by Mathematica Policy Research, Princeton, NJ, November 25, 1997.
- Department of Health and Human Services (HHS), Office of Inspector General. *Rural health clinics: Growth, access, and payment*. OEI-05-94-00040. July 1996.
- Farley DO, Harris K, Taylor P, Kan H, Ashwood JS. *Variations in Medicare AAPCC rates during the 1990's for metropolitan and non-metropolitan counties*. RAND/DRU-2523-HCFA, March 2001.
- Farley DO, Harris K, Taylor P, Kan H, Ashwood S. Analysis plan: Medicare payment in health professional shortage areas. PM-1021-HCFA. Santa Monica, CA: RAND. November 1999.
- Health Care Financing Administration (HCFA). Medicare program; Rural health clinics; Amendments to participation requirements and payment provisions; and establishment of a quality assessment and performance improvement program. Federal Register 42 CFR Parts 405 and 491. 65(39). February 28, 2000.
- Health Standards and Quality Bureau, Health Care Financing Administration (HCFA). March 1991. Letter to administrators. Baltimore, MD: HCFA.
- H.F. 3426, The Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999, as Incorporated into P.L. 106-113, Consolidated Appropriations for FY 2000, Enacted November 29, 1999. <http://www.hcfa.gov/regs/bbra/>
- Health Resources and Services Administration (HRSA), Office of Rural Health Policy. *Comparison of the Rural Health Clinic and federally qualified health center programs*. Rockville, MD: Office of Rural Health Policy. July 1995.
- Krein SL. The adoption of provider-based Rural Health Clinics by rural hospitals: A study of market and institutional forces. *Health Services Research*. 34(1):33-60. April (Part 1), 1999.
- National Rural Health Association. *The Rural Health Clinic Services Act: Public Law 95-210*. Report of the Office of Rural Health Policy, Health Resources and Service Administration. January 1991.
- Rural Health Clinic and Federally Qualified Health Center manual, Chapter 5 payment. Updated January 11, 1999.

U.S. General Accounting Office (GAO). *Rural health clinics: Rising program expenditures not focused on improving care in isolated areas*. GAO/HEHS-97-24. Washington, D.C.: GAO. November 1996.

Walsh Center for Rural Health. *Importance of Provider-Based Rural Health Clinics for Parent Hospitals and Local Access to Care*, Project Hope Center for Health Affairs, 2001.